

Intended for

**Limetree Bay Terminals and Refining
1 Estate Hope
Christiansted, Virgin Islands 00820**

Document type

**TPDES Permit No. VI0000019
Renewal Application**

Date

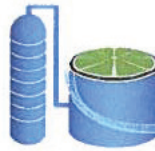
June 2019

PERMIT RENEWAL APPLICATION TPDES PERMIT NO. VI0000019





LIMETREE BAY
TERMINALS, LLC



LIMETREE BAY
REFINING, LLC

June 11, 2019

Hand Delivered

Ms. Kathlyn Worrell-George, Director
Division of Environmental Protection
#45 Mars Hill
Frederiksted, VI 00840

**SUBJECT: Territorial Pollution Discharge Elimination System
(TPDES) Permit No. VI0000019 Renewal Application**

Dear Ms. Worrell-George:

Limetree Bay Refining, LLC hereby submits the enclosed Permit Renewal Application to replace and update the TPDES Permit No. VI0000019 renewal application timely submitted by HOVENSA L.L.C. on August 31, 2012. The updates to the 2012 permit renewal application were needed to reflect the planned restart of a portion of the former HOVENSA refinery. The TPDES Permit was transferred to Limetree Bay Terminals, LLC effective as of April 1, 2016. Limetree Bay Refining elected by letter dated May 29, 2019, to be added as co-permittee to the TPDES Permit pursuant to authority granted in the Refinery Operating Agreement with the Government of the Virgin Islands. Limetree Bay Refining is the operator of the wastewater and stormwater management systems at this facility and is submitting this application on behalf of both Limetree Bay Refining and Limetree Bay Terminals.

If you have any questions or need additional information, please contact Joyce Wakefield at (340) 692-3205.

Sincerely,

Brian Lever
President
Limetree Bay Refining, LLC

EXECUTIVE SUMMARY AND ATTACHMENTS

Executive Summary

ES-1. Effluent Characterization and Data Handling Summary



EXECUTIVE SUMMARY

This Executive Summary and subsequent attachments constitute the amended Territorial Pollutant Discharge Elimination System (TPDES) Permit Renewal Application by Limetree Bay Terminals, LLC (LBT) and Limetree Bay Refining, LLC (LBR), as co-permittees.¹ As permitted by Section 14.1 of the Refinery Operating Agreement, LBR elected by letter dated May 29, 2019 to be added as co-permittee to TPDES Permit No. VI0000019, which was transferred to LBT effective as of April 1, 2016. LBT and LBR are separate companies but are under common ownership and will be referred to collectively in this application as Limetree Bay Terminals and Refining.

BACKGROUND

The Limetree Bay Terminals and Refining facility ("the site" or "facility") is an industrial complex on the south shore of St. Croix, USVI. A map showing the approximate boundaries of the terminal and refining facilities is Exhibit 1 to this application and is the "site" as defined in 12 VIRR §184-2 (82). Portions of the site are owned by either the Government of the Virgin Islands or by the Environmental Response Trust ("ERT"), formed to conduct remediation of the former HOVENSA L.L.C. ("HOVENSA") facility. However, Limetree Bay Refining is the operator of facility stormwater and wastewater conveyance, treatment, and discharge (outfall) systems and is the applicant in accordance 12 VIRR §184-31(b).

HOVENSA was issued TPDES Permit No. VI0000019 for its facility, which became effective on March 1, 2008. Some of the refinery process units on the West Side were temporarily idled by HOVENSA in early 2011, reducing the refinery's crude charge rate to approximately 350,000 BPCD (barrel per calendar day), and all remaining refinery process units at the facility were temporarily idled in early 2012. Terminal operations, local product distribution, and the emissions units that support those operations continued to operate. On August 31, 2012, HOVENSA submitted a complete renewal application for its TPDES permit, which contained a terminal-only operations scenario and a 350,000 bbl/day refining scenario. The renewal application was timely submitted and complete as of September 20, 2012, so that the conditions of HOVENSA's TPDES Permit continued in force pursuant to 12 VIRR 184-25. No action has been taken on the 2012 renewal.

On January 4, 2016, LBT purchased assets from HOVENSA including the refinery process units and utilities that had been temporarily idled in 2011 and 2012. LBT applied for transfer of TPDES Permit VI0000019, which automatically transferred to LBT on April 1, 2016, in accordance with 12 VIRR §184-71(b), as confirmed by a letter to LBT dated June 2, 2016.

The asset sale to LBT was subject to an agreement ("Operating Agreement") between the Government of the Virgin Islands ("GVI") and LBT for the operation of the assets acquired by LBT, which was executed by the GVI and LBT on December 1, 2015. Under the Operating Agreement, LBT was contractually obligated to evaluate the potential for resuming operation of the Refinery during a period ending no later than December 2018. Based on the evaluation, LBT announced plans to resume operation of a portion of the former HOVENSA Refinery.

LBR was formed to carry out the proposed restart of a portion of the Refinery. On November 30, 2018, parts of the refining assets were transferred from LBT to LBR. LBR will own or operate the refining assets and will assume LBT's rights to certain lands. LBT's obligation to evaluate a Refinery restart was transferred to LBR and extended until July 27, 2021 so that additional units

¹ Limetree Bay Ventures LLC is the common parent owner.

may be restarted later. LBT will continue to own and operate the remaining assets, mostly terminal related. LBT retains undivided ownership interest in many assets transferred to LBR. Both LBT and LBR are parties to a shared services agreement under which both parties participate in the management of the site assets and its permits, including the TPDES Permit. Because of common corporate and physical asset ownership and the operational nexus between LBR and LBT, they are applying jointly as co-permittees. Accordingly, in this Permit Renewal Application, activities or sources will not be distinguished between LBT or LBR but will be referred to as Limetree Bay Terminals and Refining.

Purpose of Application

As the 2011 modification application and 2012 renewal applications by HOVENSA were based on different operating scenarios than the operations Limetree Bay Terminals and Refining expects going forward, Limetree Bay Terminals and Refining is filing this amendment to the 2012 renewal application for renewal of TPDES Permit No. VI0000019, so that this permit will remain administratively extended until action is taken on the amended application.² This summary contains a brief description of the source of materials contained in this application and a general overview of the renewal request. The attached TPDES Permit Renewal Application consists of the following three forms:

1. Form 1 - the general application that applies to all applicants
2. Form 2C - applies to all existing industrial facilities with process wastewater
3. Form 2F - which applies to stormwater only discharges related to industrial activity

The application also contains information on the water and wastewater treatment additives used by Limetree Bay Terminals and Refining and request to certain conditions of the current Permit (e.g., continued implementation of a mixing zone for Outfall 001).

FACILITY OPERATIONS

Limetree Bay Terminals and Refining requests that the renewed permit reflect three different operational phases that may occur during the next permit cycle. Each Operational Phase is described below. Limetree Bay Terminals and Refining anticipates that discharge of wastewater under Operational Phase A operating conditions will occur October 2019. Limetree Bay Terminals and Refining will notify U.S. Virgin Islands Department of Planning and Natural Resources (DPNR) at least 60 days before changing operational scenarios.

Current Conditions

Limetree Bay Terminals and Refining is operating as a terminal at this time with construction and testing activities to support refinery restart. Terminal only operations (including remediation wastewater generated by the ERT) are reflected in the Outfalls 001 and 401 current conditions water balance summary (**Figure 3.0**), Form 2C wastewater characteristics (separate Section V tables for each outfall), and Form 2F stormwater characteristics (for Outfalls 004, 006, 007, 008, 009, and 011). Terminal operations will continue going forward with refinery operations adding flow, modifying effluent and stormwater quality, and additional treatment capacity.

Limetree Bay Terminals and Refining Operations planned in support of MARPOL

Limetree Bay Terminals and Refining will be restarting a portion of the refinery³ utilizing existing process units with the intent to supply low sulfur (0.5%) marine fuels and other fuels. The demand for low sulfur marine fuels is expected due to an amendment to Annex VI of the International Convention for the Prevention of Pollution from Ships (otherwise known as

² This amendment replaces the 2012 renewal application in its entirety, provided that the permit remains administratively extended.

³ At one time this refinery site processed (peak) 650,000 bbls/d. Limetree Bay Terminals and Refining has, however, surrendered permits for a number of those units in order to comply with the EPA PRI Consent Decree, including 2 of the 4 crude distillation units in operation in 2011, so that this application does not propose an operational scenario based on the past configuration.

MARPOL) that is effective January 1, 2020. Most countries, including the United States, are signatories to MARPOL Annex VI.

Based on the permit application from Limetree Bay Terminals and Refining to DPNR in April 2019 related to air permits, Limetree Bay Terminals and Refining plans to resume operation of some of the existing refinery process units and certain utilities. The refinery process units and utilities that are proposed to resume operation are listed below:

| Refinery Process Units | |
|--|---|
| #5 Crude Unit (#5 CDU) | #2 Distillate Desulfurizer (#2 DU) |
| #6 Crude Unit (#6 CDU) | #4 Platformer (#4 Plat) |
| #3 Vacuum Unit (#3 VAC) | Delayed Coker Unit (DCU) |
| #7 Distillate Desulfurizer (#7 DD) | Penex Unit (converted to a Par-Isom unit) |
| #3 Platformer (#3 Plat) - #3 Hydrobon (only) | #9 Distillate Desulfurizer (#9 DD) |
| #3 Platformer (#3 Plat) | Utility Fractionator |
| #6 Distillate Desulfurizer (#6 DD) | # 2 Gas Recovery Unit (#2 GRU) |

It also lists the following supporting utilities:

| |
|---|
| Boilers <ul style="list-style-type: none"> - #8 Boiler (B-3303) - #9 Boiler (B-3304) - #10 Boiler (B-3701) |
| Powerhouse 2 - Gas Turbine/Steam Generators <ul style="list-style-type: none"> - GT No. 7 (G-3407)* - GT No. 8 (G-3408)* - GT No. 9 (G-3409) - GT No. 10 (G-3410) - GT No. 13 (G-3413) |
| Flares <ul style="list-style-type: none"> - Flare 3 - West Refinery Flare Header - Low Pressure FCC Flare - East Refinery Flare Header |
| East Fuel Gas System |
| West Fuel Gas System |
| Amine Units <ul style="list-style-type: none"> - Gas Treatment (Unit No. 4800 #4 Amine Unit) - Gas Treatment (Unit No. 5800 #5 Amine Unit) - #6 Amine Unit - #7 Amine Unit |
| East Sulfur Recovery Plant <ul style="list-style-type: none"> - # 3 & #4 SRU / #2 Beavon (converted to a Shell Claus Off-gas Treatment or SCOT tail gas unit) / East Incinerator / Sulfur pits |
| East Sulfur Storage Area |
| Sulfur storage & Ship Loading |
| Coke Handling <ul style="list-style-type: none"> - Coke handling, storage, and loading system |
| Wastewater Treatment System (WWTS) <ul style="list-style-type: none"> - Wastewater Treatment System (WWTS)** #3 Sour Water Stripper #4 Sour Water Stripper #5 Sour Water Stripper |

* A unit that is presently in service

**A system with most units presently in service, portions will be resuming operation.

The 2019 Permit Renewal Application also lists terminal operations, tanks, and loading rack operations. However, the terminal is presently in operation and will remain in operation after the refinery restart. The wastewater and stormwater flows from these operations have, of course, been included in this application along with the projected flows from the restarted refining operations.

Operational Phase A

At this time, refinery Operational Phase A is expected to begin in approximately October 2019 and will include the units listed above except for #6 Crude Unit. The projected maximum crude throughput for Operational Phase A is 180,000 bbl/day. The refinery will have operational flexibility to process a wide range of light to heavy crudes and expects to mainly process sour crudes (sulfur content > 0.7%). A general schematic of the production units under Operational Phase A is shown in **Figure 4.1**.

Estimated wastewater flows as a result of refinery restart are shown in Form 2C and a water balance is presented in **Figure 3.1**. Estimated effluent quality of Outfall 001 and Outfall 401 considering the technology-based effluent limits (TBELs) at Outfall 401 is presented in **Table V-PEQ**. In addition, the wastewater treatment units restarted at the Wastewater Treatment System (WWTS) upon refinery restart are presented in Form 2C, **Figure 3.1**, and **Table II.A**. Finally, Limetree Bay Terminals and Refining presents the development of the TBELs applicable to Outfall 401 during Phase A as an attachment to the Form 2C (**Tables III.C-1 through III.C-5**). Limetree Bay Terminals and Refining anticipates that at least 60 days will be needed to acclimate the biological treatment plant to refinery operations; and therefore, requests that Outfall 401 TBELs apply after this acclimation period. Limetree Bay Terminals and Refining also anticipates at or around 7 months after the acclimation period, Limetree Bay Terminals and Refining will submit updated Outfall 401 and Outfall 001 Form 2C data (flow, conventionals, metals, and organics summaries (except pesticides and PCBs)) and Form 2F data (listed as To Be Determined-TBD-in the submitted forms) to DPNR.

Operational Phase B

Crude Unit #6 is expected to be restarted sometime in 2020. Phase B for permitting purposes is the process units in Phase A, plus #6 Crude Unit. General schematics of the WWTS and of the production units under Operational Phase B are shown in **Figure 3.2** and **Figure 4.2** respectively. Development of the TBELs applicable to Outfall 401 during Phase B is included as an attachment to the Form 2C (**Tables III.C-6 through III.C-10**). The projected maximum individual crude rate for #5 and #6 Crude is about 180,000 bbl/day but if these units are operating at the same time, the maximum combined projected crude rate is expected to be about 320,000 bbls. However, because this operational configuration is a new one at the Site, the maximum combined rate could be different.

Wastewater Treatment System (WWTS)

Wastewater generated under Operational Phase A consists of desalter effluent wastewater (DEW), remediation groundwater, process area wastewater and stormwater, intermittent receipt of ship ballast water, and utilities wastewater from power generation, maintenance activities, and an onsite laundry facility. Estimated wastewater flows as a result of refinery restart are shown in Form 2C and a water balance is presented in **Figure 3.1**. Wastewater streams identified above, except for DEW and ship ballast water, are treated for discharge via four (4) main steps including gravity separation in API separators and process water storage tanks, chemically enhanced separation, air stripping for removal of volatile organic compounds, and biological treatment via a conventional activated sludge system⁴. DEW and ballast water do not receive API separation, but otherwise treatment is the same. DEW tank function with oil skimmer, sludge/mud pump and only process water will be going to storage tanks.

⁴ Media filtration was part of original WWTS design. Media filtration has not been needed to achieve Outfall 401 discharge limits. They have been removed from service.

Gravity Separation

The purpose of the API Separator is to remove free hydrocarbons from water before the water is sent for further treatment. Gravity separation is used for lighter than water material (oil) and heavier than water materials (sludge). Free oil and heavier than water solids are pumped out as sludge during routine cleaning. Further separation also occurs in the processed water storage tanks that have a skimmer system to send oil to the slop system. Tanks are periodically shut down to remove solids and perform maintenance inspections.

Chemically Enhanced Separation

Wastewater is further treated to remove dissolved oils and suspended solids by Induced Air Floatation (IAF) in a depurator unit manufactured by WEMCO (referred to herein as the Wemco). The process unit is designed to coalesce the emulsified oil in to larger droplets that will float, this float is collected and sent to the Wemco Pacesetter for further separation. This begins by injecting a cationic polymer into the wastewater prior to IAF. This enhances the flocculation of the free and emulsified oil, causing larger oil droplets to form which are then removed by skimmer paddles.

Air Stripping

Wastewater from Wemco IAF is pumped to the East Benzene Recovery System. Removal of benzene and other VOC's to achieve wastewater discharge limits and Benzene NESHAPS compliance is accomplished within the Benzene Strippers (T-3530 and T-3531). Wastewater enters the strippers from the top through a trough distributor. The trough distributor is designed to provide even flow distribution over the stripper packing at flow turndowns as large as approximately 3 to 1. The maximum design flow rate is 1,600 GPM. Water and air come in contact in the packing section where the benzene, other VOC's, and non-organic volatile compounds are transferred from the liquid phase to the vapor phase, based on the compound's mass transfer properties defined by their Henry's constant (H) and solubility's. The vapors containing VOC's and non-organic volatile compounds leave the top on a 24" line and are routed to the caustic scrubber. The water leaving the packing is collected in the NESHAPS Effluent Tank (TK-3531 and TK-3532) or can also be recycled back through the tower if needed. The tower can be run in series or in parallel depending on benzene content and flow rate, general run in parallel. Benzenes strippers will only be operated if they are required for compliance with the benzene NESHAPS rule.

Biological Treatment

Following separation and as needed⁵ air stripping, wastewater is treated through an activated sludge process to remove soluble/insoluble organics. The activated sludge process utilizes naturally occurring bacterial microorganisms to consume and/or convert organic matter in the wastewater to carbon dioxide, water, and less harmful constituents. Organic matter converted into insoluble constituents are then removed through coagulation/flocculation following by sedimentation. The activated sludge process referred to herein includes aeration/mixing, clarification, and sludge recycle/wasting.

OUTFALL INVENTORY

The existing Permit, effective March 1, 2008, authorizes LBT, to discharge treated wastewater from Outfall 401, non-process waters from the lagoon systems, stormwater, ballast water, desalination plant reject water, non-contact cooling water, and miscellaneous non-process waters (e.g., fire test water) via Outfall 001 to Limetree Bay (NE corner of the West Basin of Limetree Bay Harbor). Stormwater is authorized to discharge from six outfalls (004, 006, 007, 008, 009, 011), and three emergency overflow outfalls (005, 012, 013). The overflow outfalls discharge primarily in response to extreme rain events (005 and 013) or other emergency situations such as excessive bacterial levels in the East Drainage Ditch (Outfall 012).

EFFLUENT CHARACTERIZATION

⁵ Air stripping will only be operated if required for compliance with the benzene NESHAPS rule.

Section V of Form 2C and Section VII of Form 2F require the presentation of effluent characterization data (concentration and mass) for select constituents. Details related to the characterization efforts and data handling are presented in **Attachment ES-1**.

OTHER PERMIT RENEWAL ITEMS

Requests for all Permits Phases

- Continuation of the Outfall 001 Dissolved Oxygen correction calculation.
- Continued authorization of the discharge of hydrostatic test waters.
- Continuation of the 12.5:1 mixing zone for implementation of WET and numeric water quality criteria.
- Modification of WET testing requirements as listed in Permit to allow use of mock or synthetic seawater as the dilution water versus using Limetree Bay (intake) water. It is permissible under the EPA-600-4-91-003 Method to use mock seawater as the dilution water.
- Revision of Outfall 008 (SW-008) sampling location.
 - Currently stormwater drained from the area is accessed through a hole cut in the steel manway cover over the stormwater junction box, which is located above the outlet. Both due to safety reasons and the amount of turbulence, Limetree Bay Terminals and Refining is requesting to move this upstream (30 feet to the north) and accessing the stormwater by removing the grated box over the manhole. There are no other stormwater streams entering the stormwater pipe between these two locations. See **Table F-I.A** for more information.
- Recognition of the Outfall 011 (SW-011) sampling location.
 - Due to access issues at the original sample location, sampling occurs at the Coke Dome Stormwater Retention Basin which is about 30 feet upstream of the original sample location. See **Table F-I.A** for more information.
- Removal of Outfall 006 (SW-006) as a sampling location⁶.
 - The stormwater associated with industrial activity (stormwater) discharged from Outfall 006 and Outfall 007 is similar and Limetree Bay Terminals and Refining is requesting sampling requirements be revised to sample Outfall 007 only as being representative of both Outfall 006 and 007. The stormwater drainage area is similar with the majority (almost all) being impervious surfaces: Outfall 006 drainage is estimated at 1.2 mil sq ft and Outfall 007 is estimated at 1.75 mil sq ft. The industrial activities in contact with stormwater are similar: refinery roads, tank farm (not in service) roads, process area road/parking, and the delayed coker unit (DCU) area stormwater that is not routed to the WWTS. Outfall 006 receives a portion from the north side of the DCU area and Outfall 007 a portion from the south side of the DCU area. Outfall 006 also receives stormwater from the instrumentation and equipment maintenance area where activities occur inside buildings and Outfall 007 also receives stormwater from the east side of Coker Domes 1 and 2. However, based on acreage both these sources would be minor to the outfalls.
 - Based on DMR data, the quality of the stormwater is similar:

| Outfall | O&G (mg/L) | TOC (mg/L) | Flow (MGD) |
|---------|----------------------|----------------------|----------------------|
| 006 | 3.10 max 1.14 ave | 13.5 max 4.87 ave | 1.57 max 0.61 ave |
| 007 | 6.40 max 1.30 ave | 18.0 max 5.50 ave | 2.29 max 0.88 ave |

- In addition, the sampling point for Outfall 006 is located 100 ft. southeast of tank field 59 dike wall. Access to the sampling point is through the south gate along the east fence. A concrete stairwell descends to the bottom of Outfall 006 to the sample

⁶ Outfall 006 remains an authorized discharge point for stormwater.

point (culvert outlet) in the east ditch. Sampling occurs in the middle of the east ditch where flow in the area is of maximum turbulence. Outfall 006 joins the St. Croix Public Works east stormwater ditch. Consequently, there can be stormwater present in the sample that is not generated by Limetree Bay Terminals and Refining and is not stormwater associated with industrial activity (i.e., sewage). There are no locations upstream to safely capture just Outfall 006 stormwater.

- Revision of Outfall 007 (SW-007) sampling location.
 - The current sampling point is located near the southeastern corner of the refinery between the North and South Bays of Landfarm 3. This outfall is approximately 900 ft. south of outfall SW-006. Access for sampling is from the northeast corner of SW-007 outfall's confluence with the east fence, upstream of the trash screen. Samples are collected from the middle of the flow stream in the area of maximum turbulence. The land in the immediate vicinity and at this sample point is no longer owned by Limetree Bay Terminals and Refining. To assure that the stormwater for Limetree Bay Terminals and Refining is sampled within 30 minutes, Limetree Bay Terminals and Refining is requesting to move the sampling location to land owned by Limetree Bay Terminals and Refining. The proposed revised sampling point for SW-007 is about 900-950 ft. upstream (to the southwest) of the current location and in the same stormwater conveyance. The proposed revised location is on facility owned land adjacent to the North and South Bays of Landfarm 3 (which are on land not owned or leased by the facility). See **Table F-I.A** for more information.

Phase A Effluent Limit Guidelines

- **Tables III.C-1 through III.C-5** includes the spreadsheets used to develop the technology-based effluent limits (TBELs) under 40 CFR 419 Subpart B at Outfall 401. As the refinery is re-starting, the unit through-puts were based on capacity of the process unit. In addition, the new source performance standards (NSPS) are still applicable to the coker unit. Finally, it is assumed that chloride will be greater than 1000 mg/L upon refinery restart and that COD will not be a reliable indicator of performance, hence TOC will be used.
- Limetree Bay Terminals and Refining anticipates that at least 60 days will be needed to acclimate the WWTS biological treatment unit to refinery operations; and therefore, requests that Outfall 401 TBELs apply after this acclimation period.
- Limetree Bay Terminals and Refining requests the continued recognition of stormwater and ballast water credit allocation for Outfall 401. However, very little ballast water is being sent to the WWTS for treatment.

Reasonable Potential to Exceed – Current Conditions and Phase A

- The current TPDES Permitted-mixing zone for WET, numeric water quality criteria, and thermal is 12.5:1. Limetree Bay Terminals and Refining requests continuation of this mixing zone, and until effluent data are generated under Phase A, continuation of the Outfall 001 thermal policy.
- A primary source of heat for Outfall 001, the rejects from the desalination plant, no longer exists as a source. The desalination plant has been replaced with RO units with rejects that will not include elevated temperature, however salinity will be similar.
- **Tables RPE-1 and RPE-2** present data for the reasonable potential to exceed analysis for current Outfall 001 effluent quality and the projected effluent quality for Outfall 001 under Phase A. Each table shows a comparison of effluent quality (with and without the 12.5:1 mixing zone allowance) to the most stringent applicable water quality criteria.

ES-1. EFFLUENT CHARACTERIZATION AND DATA HANDLING

Section V of Form 2C and Section VII of Form 2F require the presentation of effluent characterization data (concentration and mass) for select constituents. In regard to sampling and analyses, as applicable permit-required conditions were followed. Where no permit requirements were listed, sampling and analyses followed 40 CFR Part 136 unless noted below. A summary of effluent characterization procedures (utilized for both Form 2C and Form 2F) is provided below:

For all data:

- For temperatures, summer was defined as April 1 through November 30 and winter was defined as December 1 through March 31.
- When there is more than one result for a parameter, the number of analyses presented is first the number of daily values and second the number of monthly average values.
- Monthly average values were generated only if there was more than one sample in the calendar month.
- Mass values were not calculated if all data for a parameter were non-detect.
- Data were used as reported by the analytical laboratory. The presence of a "<" flag indicates that all results for that parameter non-detect at the method detection limit (MDL) or reporting limit (RL). When reported by the lab, J flagged values (estimated results between the MDL and RL were utilized as reported).
- For parameter data sets containing both detections and non-detections, all results were used in the calculation of the long-term average (for non-detect values the MDL or RL was used for calculation purposes), but only detections were used to determine the maximum statistics. This occurs for:
 - Outfall 001 Benzene, Butyl Benzyl Phthalate, and Di-N-Butyl Phthalate
 - Outfall 401 BOD and Chromium.
- When field duplicates or split samples were analyzed, the average of results were utilized unless noted.

Outfall 001 and Outfall 401 Form 2C, Section V for Current (Terminal Only) Operations:

For parameters currently monitored under the TPDES permit:

- The DMR database from January 2016 through February 2019 with inclusion of any overlap data from other sampling events listed below and available data for the timeframe immediately following Hurricane Maria (these data were not required to be reported).
- Generally, data were reported to the method detection limit (MDL) and for non-detect values the MDL was used for reporting and calculation purposes.
- Data presented for Outfall 001 are gross values and do not include any correction for stormwater or ballast water credits.

For parameters not currently monitored under the TPDES permit:

- Data from three sampling events were utilized:
 - June 2018 Event: On June 26-27, 2018 EPA Region 2 sampled Outfall 001 and Outfall 401 for a variety of conventional, metals and organics. The EPA Region 2 laboratory performed the analysis and split samples for select parameters were also analyzed by Pace Analytical Services. All data were used except for select metals results which were non-detect at an elevated detection limit and for which other results were available.
 - November 2018 Event: Sampling of Outfall 001 and Outfall 401 for a variety of conventional, metals and organics occurred on November 15, 2018. Analysis for non-field parameters was performed by Pace Analytical Services.
 - Analysis of select semi-volatile compounds required by Form 2C was performed using 2 methods: 625 and 8270. In these cases, results were averaged and utilized as one result.

- Any concerns regarding sample hold time and temperature are indicated by notes on the Form 2C. In addition, the sample login sheet noted that 5 of the 6 vials for volatile organics included excess headspace.
- March 2019 Event: Sampling of Outfall 001 for select conventional and metals analysis occurred on March 18, 2019. Analysis for non-field parameters was performed by Pace Analytical Services. This event consisted of grab only sampling including for those parameters normally collected as 24-hr composite samples.

Outfall 001 and Outfall 401 Form 2C, Section V for Phase A/B (Terminal + Refinery) Operations:

- Since the facility is currently operating as a Terminal Only, wastewater generated is not consistent or representative of Terminal + Refinery (Phase A or Phase B) Operational discharges, and it is not possible to provide actual characterization information for the wastewater discharged at Outfalls 001 or 401. Therefore, no regular Form 2C Section V tables have been generated for the Phase A or Phase B effluent quality. Table V-PEQ provides Projected Effluent Quality (PEQ) information for parameters with associated effluent limitation guidelines (ELG) under Phase A Operations.
- Once the facility commences Phase A operations, Outfall 401 and 001 effluent will be characterized for required Form 2C parameters and data submitted to DPNR.

Outfalls 004, 006, 007, 008, 009 and 011 Form 2F Data

For parameters currently monitored under the TPDES permit:

- The DMR database from January 2016 through February 2019 was utilized with inclusion of any available data for the timeframe immediately following Hurricane Maria (these data were not required to be reported). This time period is representative of Terminal Only Operations.
- Generally, data were reported to the method detection limit (MDL) and for non-detect values the MDL was used for reporting and calculation purposes.
- Stormwater samples were collected as grab samples during various times of storm events.
- Total flows from the rain events were estimated from the rainfall amounts recorded from a facility gage on the day the samples were collected. This rainfall was multiplied by the specific outfall drainage area (with appropriate unit conversion factors) to determine the total flow volume. No stormwater flowrates were directly measured.

For parameters not currently monitored under the TPDES permit:

- Testing of Form 2F parameters not required by the current TPDES permit was not performed. Monitoring of these parameters is proposed for after the start of Phase A operations. For each outfall, samples will be collected for the first qualified storm event that produces adequate flow.

USEPA FORM 1 AND ASSOCIATED ATTACHMENTS

Form 1

Table 1-X. Additional Permits

Figure 1. Site Location Map

Figure 2A. Facility Layout

Figure 2B. Facility Boundary Map

| FORM 1 GENERAL | | U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION Consolidated Permits Program (Read the "General Instructions" before starting.) | | I. EPA I.D. NUMBER | | | | | |
|---|--|--|----|---|---|-------------|-------|----|---------------|
| | | | | S | F | T/A | C | | |
| | | | | 110000307864 | | | D | | |
| LABEL ITEMS | | | | 1 | 2 | 13 | 14 15 | | |
| I. EPA I.D. NUMBER | | PLEASE PLACE LABEL IN THIS SPACE | | GENERAL INSTRUCTIONS If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected. | | | | | |
| III. FACILITY NAME | | | | | | | | | |
| V. FACILITY MAILING ADDRESS | | | | | | | | | |
| VI. FACILITY LOCATION | | | | | | | | | |
| II. POLLUTANT CHARACTERISTICS | | | | | | | | | |
| INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms . | | | | | | | | | |
| SPECIFIC QUESTIONS | | Mark "X" | | SPECIFIC QUESTIONS | | Mark "X" | | | |
| | | YES | NO | FORM ATTACHED | | | YES | NO | FORM ATTACHED |
| A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A) | | | X | | B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B) | | | X | |
| | | 16 | 17 | 18 | | | 19 | 20 | 21 |
| C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C) | | X | | X | D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D) | | | X | |
| | | 22 | 23 | 24 | | | 25 | 26 | 27 |
| E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3) | | X | | | F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4) | | | X | |
| | | 28 | 29 | 30 | | | 31 | 32 | 33 |
| G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4) | | | X | | H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4) | | | X | |
| | | 34 | 35 | 36 | | | 37 | 38 | 39 |
| I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5) | | | X | | J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5) | | | X | |
| | | 40 | 41 | 42 | | | 43 | 44 | 45 |
| III. NAME OF FACILITY | | | | | | | | | |
| C. SKIP | | Limetree Bay Terminals and Refining | | | | | | | |
| 1 | | 69 | | | | | | | |
| IV. FACILITY CONTACT | | | | | | | | | |
| A. NAME & TITLE (last, first, & title) | | | | B. PHONE (area code & no.) | | | | | |
| C. 2 | | | | | | | | | |
| 15 16 | | 45 46 48 49 51 52- 55 | | | | | | | |
| V. FACILITY MAILING ADDRESS | | | | | | | | | |
| A. STREET OR P.O. BOX | | | | | | | | | |
| C. 3 | | 1 Estate Hope | | | | | | | |
| 15 16 | | 45 | | | | | | | |
| B. CITY OR TOWN | | | | C. STATE | | D. ZIP CODE | | | |
| C. 4 | | Christiansted | | VI | | 00820 | | | |
| 15 16 | | 40 41 42 | | 47 | | 51 | | | |
| VI. FACILITY LOCATION | | | | | | | | | |
| A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER | | | | | | | | | |
| C. 5 | | Limetree Bay | | | | | | | |
| 15 16 | | 45 | | | | | | | |
| B. COUNTY NAME | | | | | | | | | |
| C. 6 | | St. Croix | | | | | | | |
| 15 16 | | 46 70 | | | | | | | |
| C. CITY OR TOWN | | | | D. STATE | | E. ZIP CODE | | | |
| C. 6 | | Christiansted | | VI | | 00820 | | | |
| 15 16 | | 40 41 42 | | 47 | | 51 52- 54 | | | |

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

| A. FIRST | | | | B. SECOND | | | |
|----------|------|-----------|--------------------|-----------|------|-----------|---|
| 7 | 2911 | (specify) | Petroleum Refining | 7 | 5171 | (specify) | Petroleum Bulk Terminal (auxiliary after restart with SIC 2911) |
| 15 | 16 | 17 | 18 | 15 | 16 | 17 | 18 |
| C. THIRD | | | | D. FOURTH | | | |
| 7 | | (specify) | | 7 | | (specify) | |
| 15 | 16 | 17 | 18 | 15 | 16 | 17 | 18 |

VIII. OPERATOR INFORMATION

| A. NAME | | | | | | | | | | | | | | | B. Is the name listed in Item VIII-A also the owner? | | |
|--|-----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|
| 8 | Limetree Bay Refining | | | | | | | | | | | | | | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | | |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other," specify.) | | | | | | | | | | | | | | | D. PHONE (area code & no.) | | |
| F = FEDERAL S = STATE P = PRIVATE M = PUBLIC (other than federal or state) O = OTHER (specify) | | | | | | | | | | | | | | | P (specify) | | |
| | | | | | | | | | | | | | | | A | | |
| | | | | | | | | | | | | | | | 15 16 17 18 19 20 21 22 23 24 25 26 | | |

| E. STREET OR P.O. BOX | | | | | | | | | | | | | | | | | | | | |
|-----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 Estate Hope | | | | | | | | | | | | | | | | | | | | |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |

| F. CITY OR TOWN | | | | | | | | | | | | | | | G. STATE | | H. ZIP CODE | | IX. INDIAN LAND | | |
|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------|----|-------------|----|---|----|----|
| B Christiansted | | | | | | | | | | | | | | | VI | | 00820 | | Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |

X. EXISTING ENVIRONMENTAL PERMITS

| A. NPDES (Discharges to Surface Water) | | | | | | | | | | D. PSD (Air Emissions from Proposed Sources) | | | | | | | | | | | | | | | |
|--|----|-----------|----|----|----|----|----|----|----|--|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 9 | N | VI0000019 | | | | | | | | 9 | P | see Table 1-X | | | | | | | | | | | | | |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| B. UIC (Underground Injection of Fluids) | | | | | | | | | | E. OTHER (specify) | | | | | | | | | | | | | | | |
| 9 | U | | | | | | | | | 9 | | STX-TV-003-10 (specify) Title V Air - pending renewal | | | | | | | | | | | | | |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| C. RCRA (Hazardous Wastes) | | | | | | | | | | E. OTHER (specify) | | | | | | | | | | | | | | | |
| 9 | R | | | | | | | | | 9 | | see Table 1-X (specify) | | | | | | | | | | | | | |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Limetree Bay Terminals and Refining currently consists of terminal-only operations. Re-start of select petroleum refining operations is planned to occur between August and October 2019. See the executive summary for further details.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

| A. NAME & OFFICIAL TITLE (type or print) | | | | | | | | | | | | | | | B. SIGNATURE | | | | | | | | | | | | | | | C. DATE SIGNED | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BRIAN K. LEVER PRESIDENT | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | 06/11/19 | | | | | | | | | | | | | | |

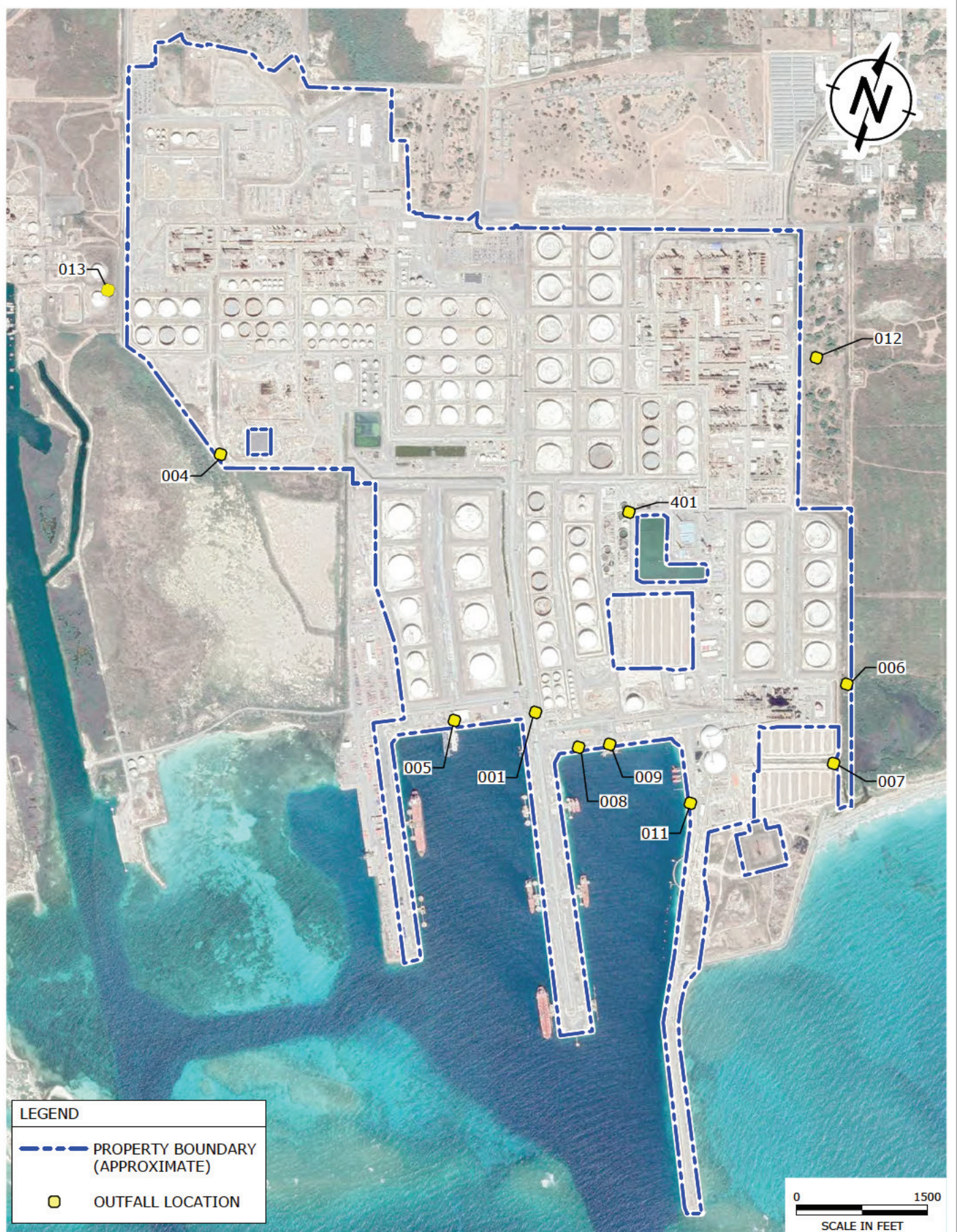
COMMENTS FOR OFFICIAL USE ONLY

| COMMENTS FOR OFFICIAL USE ONLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |

TABLE 1-X. ADDITIONAL ENVIRONMENTAL PERMITS

| Permit Number | Description |
|---|---|
| STX-TV-003-10 | Authorities to Construct, Permits to Operate, and PSD permits referenced in the Title V |
| August 17, 2011 Amendment to LSF PSD Permit | Amendment to permit referenced in STX-TV-003-10 |
| July 5, 2011 Amendment to LSF PSD Permit | Amendment to permit referenced in STX-TV-003-10 |
| May 5, 2011 Amendment to 1997 PSD Permit | Amendment to permit referenced in STX-TV-003-10. |
| February 28, 2010 Amendment to LSF PSD | Amendment to permit referenced in STX-TV-003-10. |
| VI0000349 | Drinking Water (Community System) |
| CZX-29-17 (L&W) | CZM Permit related to SPM construction and pipeline. |
| STX-895-AC-PO-18 | Gasoline Loading MVCS and SPM |
| STX-797-A-B-09 | Permit to Operate Vacuum Enhanced Recovery (VER)s 3 & 4 issued on January 25, 2010 |
| STX-557-F-08 | Permit to Operate #1 Vacuum Unit Compressor issued on October 30, 2008 |
| STX-557 - N-Z-08 | Permit to Operate the HOVENSA Wastewater Plant issued on January 18, 2008 |
| STX-804-10 | Permit to Construct West Sulfur Pit Vent Control issued on November 17, 2010 |
| STX C-093 | Hazardous Waste Generation and Storage |
| STX-270 | Special Solid Waste Permit to Generate and Store Used Oil |
| STX-924-AC-18 (modification pending) | MARPOL ATC for refinery restart |

L:\Loop Project Files\CAD\1690010053_Limetree Bay_Permit Renewal\TPDES\02A_Facility Layout (St Croix VI).dwg



NEICVP1416E01
DRAFTED BY: ELS

DATE: 6/7/19

FACILITY LAYOUT
LIMETREE BAY TERMINALS AND REFINING, LLC
ST. CROIX, VIRGIN ISLANDS

Page 18 of 88
Appendix B

Limetree Bay Refining and Terminals
Christiansted, U.S. Virgin Islands 1690010053

FIGURE
2A

USEPA FORM 2C AND ASSOCIATED ATTACHMENTS

Form 2C pages 1-4

Figure 3.0 Current Water Balance

Figure 3.1 Phase A Wastewater Treatment / Water Balance

Figure 3.2 Phase B Wastewater Treatment / Water Balance

Table II.A. Wastewater Treatment Plant Tank Listing

Tables III.C-1 through III.C-5: Phase A TBEL Calculations

Figure 4.1 Phase A Process Flow Diagram

Tables III.C-6 through III.C-10: Phase B TBEL Calculations

Figure 4.2 Phase B Process Flow Diagram

Section V Tables for Current Outfall 001

Section V Tables for Current Outfall 401

Table V-PEQ. Projected Effluent Quality Under Phase A

Table RPE-1. Comparison of Current Outfall 001 to WQC

Table RPE-2. Comparison of Phase A Outfall 001 to WQC

Table V-I. Available Seawater (Intake) Data

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

Consolidated Permits Program

EPA I.D. NUMBER (copy from Item 1 of Form 1)

110000307864

Form Approved.

OMB No. 2040-0086

Approval expires 3-31-98.

Please print or type in the unshaded areas only.

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

| A. OUTFALL NUMBER (list) | B. LATITUDE | | | C. LONGITUDE | | | D. RECEIVING WATER (name) |
|--------------------------|-------------|--------|--------|--------------|--------|--------|--|
| | 1. DEG | 2. MIN | 3. SEC | 1. DEG | 2. MIN | 3. SEC | |
| 001 | N 17 | 42 | 11 | W 64 | 45 | 5 | Limetree Bay, NE corner of West Basin |
| 401 | N 17 | 42 | 36 | W 64 | 44 | 59 | Internal to Outfall 001 |
| 005 | N 17 | 42 | 32 | W 64 | 45 | 33 | Emergency Overflow to Krause Lagoon |
| 012 | N 17 | 43 | 2 | W 64 | 44 | 49 | Emergency Overflow to East Drainage Ditch (Canegarden Bay) |
| 013 | N 17 | 42 | 49 | W 64 | 46 | 7 | Emergency Overflow to Krause Lagoon |

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES.

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. See Figures 3.0, 3.1, & 3.2 and Table II.A.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

| 1. OUTFALL NO. (list) | 2. OPERATION(S) CONTRIBUTING FLOW | | 3. TREATMENT | |
|-------------------------|--|--|--|-------------------------------|
| | a. OPERATION (list) | b. AVERAGE FLOW (include units) | a. DESCRIPTION | b. LIST CODES FROM TABLE 2C-1 |
| 001 | Current: Terminal Operations Only | 13.15 MGD Max Mo. Ave | Ocean Discharge via Outfall | 4B |
| | Phase A: Terminal + Refinery | Est. 21.959 MGD Max Mo. Ave | | |
| | Phase B: Terminal + Refinery | To be determined | | |
| | To 001: RO Reject / Backwash | Current: Est. 0.46 MGD; Phase A: Est. 4.53 MGD | not applicable | --- |
| | To 001: Unused Seawater | Current: Est. 10.4 MGD; Phase A: Est. 10.4 MGD | not applicable | --- |
| | To 001: DEW Coolers NCCW | Current: 0 MGD; Phase A: Est. 1.4 MGD | # 3 Polishing Pond | 1F |
| | To 001: NESHAP Strippers NCCW | Current: 0 MGD; Phase A: Est. 1.68 MGD | # 3 Polishing Pond | 1F |
| | To 001: Non-Process Stormwater | Current: Est. 1.79 MGD; Phase A: Est. 1.79 MGD | Stormwater Lagoons | 3B, 1F |
| | To 001: Outfall 401 wastewater | Current: Est. 0.502 MGD; Phase A: Est. 2.159 MGD | All 401 wastewaters (except ballast water and desalter effluent wastewater) are treated as shown below. Ballast water and DEW does not receive API separation; otherwise treatment is the same as shown below. | |
| 401 | Outfall 401 - WWTS | | No. 1 API and No. 3 API Separators | 1H |
| | - Desalter Effluent Wastewater | Current: 0 MGD; Phase A: Est. 0.5 MGD | Ballast Tanks | --- |
| | | | No. 3 WEMCO | 1H |
| | - Remediation Groundwater | Current: Est. 0.23 MGD; Phase A: Est. 0.23 MGD | Air Stripping | 1A |
| | | | Air Coolers | --- |
| | - Process Wastewater & Stormwater | Current: Est. 0.221 MGD; Phase A: Est. 0.845 MGD | Equalization Tanks | --- |
| | | | Aeration Tanks | 3A |
| | - Ballast Water | Current: intermittent (rare) Phase A: intermittent | Degas Tanks | 1G |
| | | | Clarifier Tanks | 1U |
| | - Utilities Wastewater (boiler blowdown, condensate, cooling tower blowdown, maintenance including laundry, bundle wash) | Current: Est. 0.0584 MGD; Phase A: Est. 0.57 MGD | Pressure Filter Surge Tanks | --- |
| Media Pressure Filters | | | 1R | |
| Post Aeration Tanks | | | --- | |
| Current Sludge Handling | | | 5L | |
| | | Phase A & B Sludge Handling | 5L | |

OFFICIAL USE ONLY (effluent guidelines sub-categories)

EPA Form 3510-2C (8-90)

PAGE 1 of 4

CONTINUE ON REVERSE

NEICVP1416E01

Page 21 of 88
Appendix B

Limetree Bay Refining and Terminals
Christiansted US Virgin Islands

CONTINUED FROM THE FRONT

| C. Except for storm runoff, leaks, or spills, are any of the discharges described in items II-A or B intermittent or seasonal? | | | | | | | | |
|--|--|--|---|--------------------------|--|---|---------------------|--------------------------|
| <input checked="" type="checkbox"/> YES (complete the following table) | | | | | <input type="checkbox"/> NO (go to Sections III) | | | |
| 1. OUTFALL NUMBER (list) | 2. OPERATION(s) CONTRIBUTING FLOW (list) | 3. FREQUENCY | | 4. FLOW | | | | c. DURATION (in days) |
| | | a. DAYS PER WEEK (specify average) | MONTHS PER YEAR (specify average) | a. FLOW RATE (in mgd) | | b. TOTAL VOLUME (specify with units) | | |
| | | | | 1. LONG TERM AVERAGE | 2. MAXIMUM DAILY | 1. LONG TERM AVERAGE | 2. MAXIMUM DAILY | |
| 001 | Ballast Water | | | | | | | |

| III. PRODUCTION | | | | | | | | | | | | |
|---|---|---|---|--|---|---------------------|--------------------|--|--|--|---|--|
| A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility? | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> YES (complete Item III-B) | <input checked="" type="checkbox"/> NO (go to Section IV) | | | | | | | | | | | |
| B. Are the limitations in the applicable effluent guidelines expressed in terms of production (or other measure of operation)? | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> YES (complete Item III-C) | <input checked="" type="checkbox"/> NO (go to section IV) | | | | | | | | | | | |
| C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls. | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">1. AVERAGE DAILY PRODUCTION</th> <th rowspan="2">2. AFFECTED OUTFALLS (list outfall numbers)</th> </tr> <tr> <th>a. QUANTITY PER DAY</th> <th>b. UNIT OF MEASURE</th> <th>c. OPERATION, PRODUCT, MATERIAL, ETC. (specify)</th> </tr> <tr> <td></td> <td></td> <td> <p>No TBELS applicable to current operations (Terminal only)</p> <p>TBELS projected for proposed operations (Terminal + Refinery) are given in the Tables III.C-1 through III.C-10. The associated production scenarios are shown in Figures 4.1 and 4.2.</p> </td> <td></td> </tr> </table> | | 1. AVERAGE DAILY PRODUCTION | | | 2. AFFECTED OUTFALLS (list outfall numbers) | a. QUANTITY PER DAY | b. UNIT OF MEASURE | c. OPERATION, PRODUCT, MATERIAL, ETC. (specify) | | | <p>No TBELS applicable to current operations (Terminal only)</p> <p>TBELS projected for proposed operations (Terminal + Refinery) are given in the Tables III.C-1 through III.C-10. The associated production scenarios are shown in Figures 4.1 and 4.2.</p> | |
| 1. AVERAGE DAILY PRODUCTION | | | 2. AFFECTED OUTFALLS (list outfall numbers) | | | | | | | | | |
| a. QUANTITY PER DAY | b. UNIT OF MEASURE | c. OPERATION, PRODUCT, MATERIAL, ETC. (specify) | | | | | | | | | | |
| | | <p>No TBELS applicable to current operations (Terminal only)</p> <p>TBELS projected for proposed operations (Terminal + Refinery) are given in the Tables III.C-1 through III.C-10. The associated production scenarios are shown in Figures 4.1 and 4.2.</p> | | | | | | | | | | |

| IV. IMPROVEMENTS | | | | | |
|--|----------------------|------------------------|--|--------------------------|--------------|
| A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions. | | | | | |
| <input type="checkbox"/> YES (complete the following table) | | | <input checked="" type="checkbox"/> NO (go to Item IV-B) | | |
| 1. IDENTIFICATION OF CONDITION AGREEMENT, ETC. | 2. AFFECTED OUTFALLS | | 3. BRIEF DESCRIPTION OF PROJECT | 4. FINAL COMPLIANCE DATE | |
| | a. NO. | b. SOURCE OF DISCHARGE | | a. REQUIRED | b. PROJECTED |
| | | | | | |

| | |
|--|--|
| B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. | |
| <input type="checkbox"/> MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED | |

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding - Complete one set of tables for each outfall - Annotate the outfall number in the space provided

NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

Current effluent quality provided on normal section V tables. Projected effluent quality for ELG parameters under Phase A operations provided in Table V-PEQ.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

| 1. POLLUTANT | 2. SOURCE | 1. POLLUTANT | 2. SOURCE |
|---|-------------------------------------|--------------|-----------|
| The following could be potentially discharged via Outfall 001 under Terminal + Refinery Operations: | | | |
| Strontium, Total | Present in Crude | | |
| Vanadium, Total | Present in Crude | | |
| Naphthenic Acid | Present in Crude | | |
| Monoethanolamine | Sulfur Recovery Process | | |
| Diethanolamine | Sulfur Recovery Process | | |
| Xylene (mixed isomers) | Present in Crude Fractions, Product | | |

VI. POTENTIAL DISCHARGE NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☒ YES (list all such pollutants below)☐ NO (go to Item VI-B)

Parameters applicable after start of refining operations:

2M Arsenic, total
7M Lead, total
9M Nickel, total
10M Selenium, total
13M Zinc, total
15M Phenols
3V Benzene
19V Ethylbenzene
25V Toluene
10A Phenol
1B Acenaphthene
2B Acenaphthylene
3B Anthracene
5B Benzo(a)anthracene
6B Benzo(a)pyrene
7B Benzo(b)fluoranthene
8B Benzo(ghi)perylene
9B Benzo(j)fluoranthene
18B Chrysene
19B Dibenzo(a,h)anthracene
31B Fluoranthene
32B Fluorene
37B Indeno(1,2,3-cd)pyrene
39B Naphthalene
44B Phenanthrene
45B Pyrene
24V Tetrachloroethylene

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity Has been made on any of your discharges or on a receiving water in relation to your discharge within the past 3 years?

☒ YES (identify the test(s) and describe their purpose below)

☐ NO (go to Section VIII)

Seven-day chronic marine tests on mysid shrimp and silverside minnow are required in the TPDES Permit for Outfall 001. Recent results are:

| Test Date (start) | Species | Results | | |
|----------------------|---------------------------|-------------|-------------|-------------|
| | | NOEC (%) | LOEC (%) | IC25 (%) |
| 4/6/2016 | <i>Americamysis bahia</i> | 100 | >100 | >100 |
| 4/6/2016 | <i>Menidia beryllina</i> | 100 | 100 | >100 |
| 5/24/2017 | <i>Americamysis bahia</i> | 100 | >100 | >100 |
| 5/24/2017 | <i>Menidia beryllina</i> | 100 | >100 | >100 |
| 8/3/2018 | <i>Americamysis bahia</i> | 8 | 16 | >100 |
| 8/1/2018 | <i>Menidia beryllina</i> | 100 | >100 | >100 |

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ YES (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

☐ NO (go to Section IX)

| A. NAME | B. ADDRESS | C. TELEPHONE (area code & no.) | D. POLLUTANTS ANALYZED (list) |
|---|--|-----------------------------------|--|
| Marinco Bioassay Laboratory, Inc. | 4569 Samuel Street Sarasota, FL 34233 | 800-889-0384 | Biomonitoring |
| Pace Analytical Services LLC | 8 East Tower Circle Ormond Beach, FL 32174 | 386-672-5668 | |
| TPDES DMR parameters except DO, pH & temp. Non-DMR parameters except those listed for Eurofins TestAmerica and Vanadium, Bis (2-Chloroisopropyl) Ether, Trichlorofluoromethane, 1,4-Dioxane, 2-Butanone, Styrene, Carbon Disulfide, Methyl tert-Butyl Ether, and Xylenes. | | | |
| Eurofins TestAmerica | 2960 Foster Creighton Drive Nashville, TN 37204 | 615-726-0177 | Mar 2019 Arsenic, Copper, Nickel, WAD CN, and BOD |
| USEPA Region 2 Laboratory | 2890 Woodbridge Ave Edison, NJ 08837 | 732-906-6886 | EPA performed sampling for a variety of parameters (metals, conventionals, organics) in June 2018. |

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information submitted is, to my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (type or print)

BRIAN K. LEVER PRESIDENT

B. PHONE NO. (area code & no.)

340-692-3101

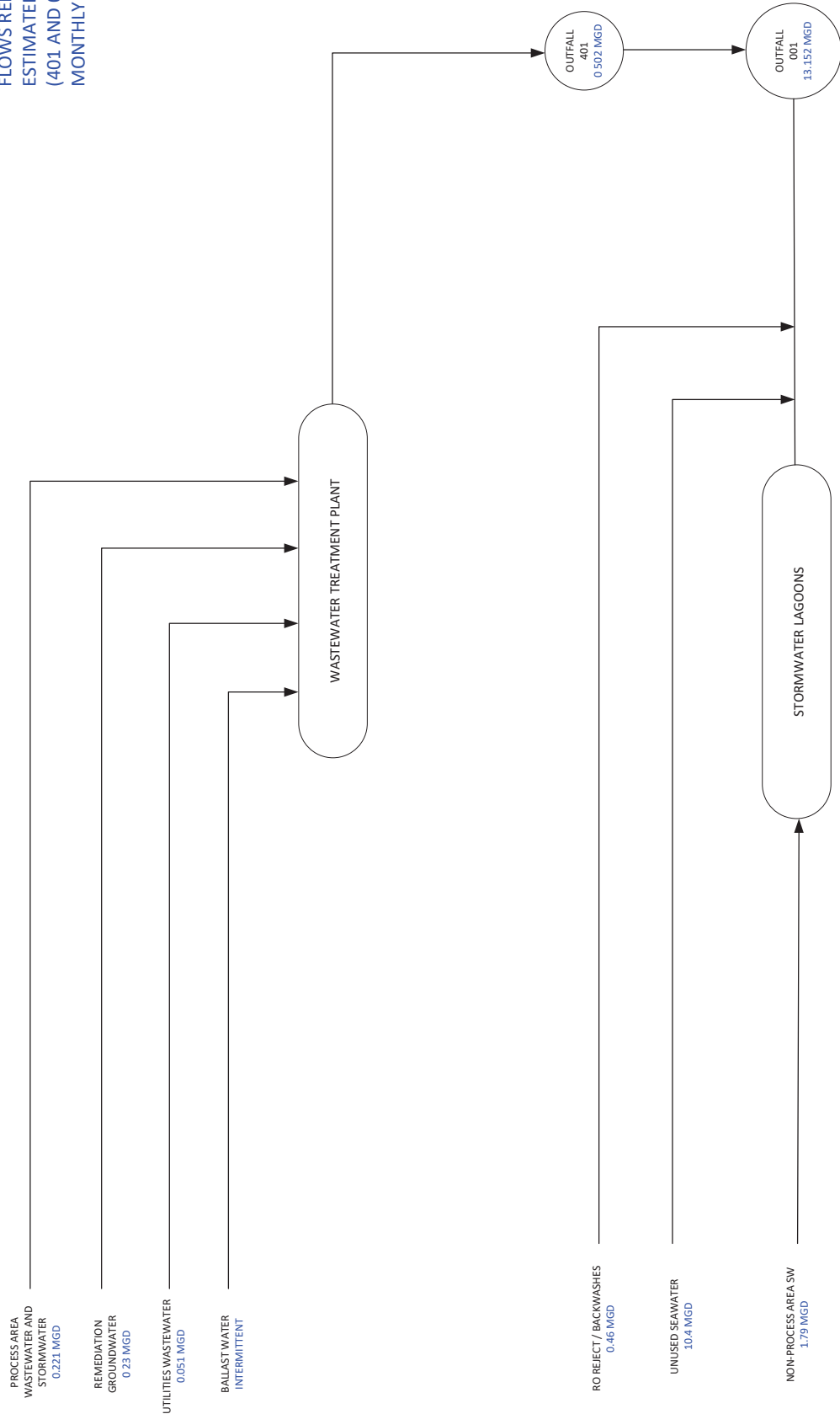
C. SIGNATURE

Brian K. Lever

D. DATE SIGNED

06/11/19.

Flows represent
estimated or measured
(401 and 001) maximum
monthly averages



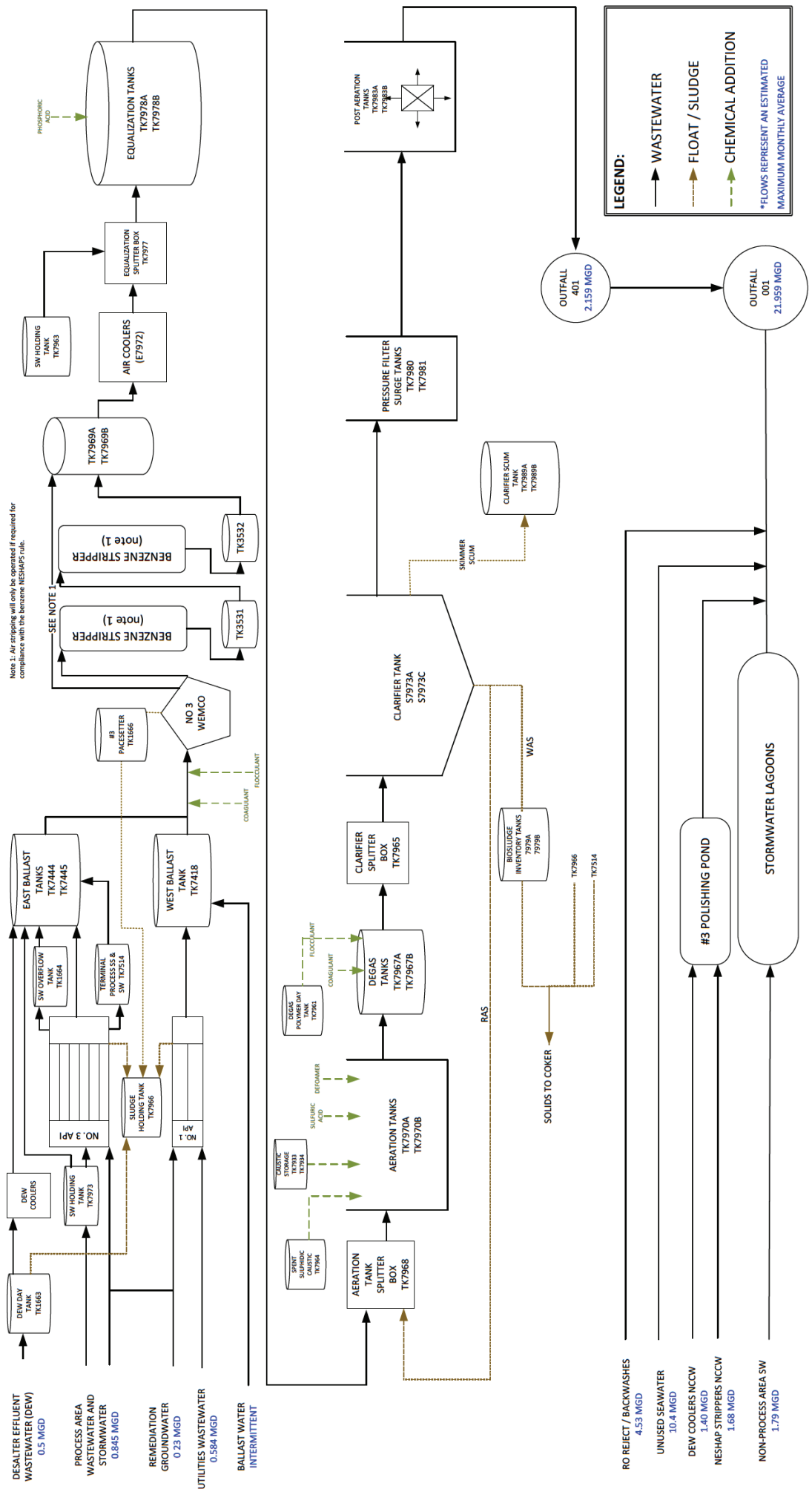
TERMINAL ONLY
WATER BALANCE DIAGRAM
LIMETREE BAY TERMINALS AND REFINING
ST. CROIX, U.S. VIRGIN ISLANDS

FIGURE 3.0

Limetree Bay Refining and Terminals
Christiansted, U.S. Virgin Islands



NEICVP1416E01



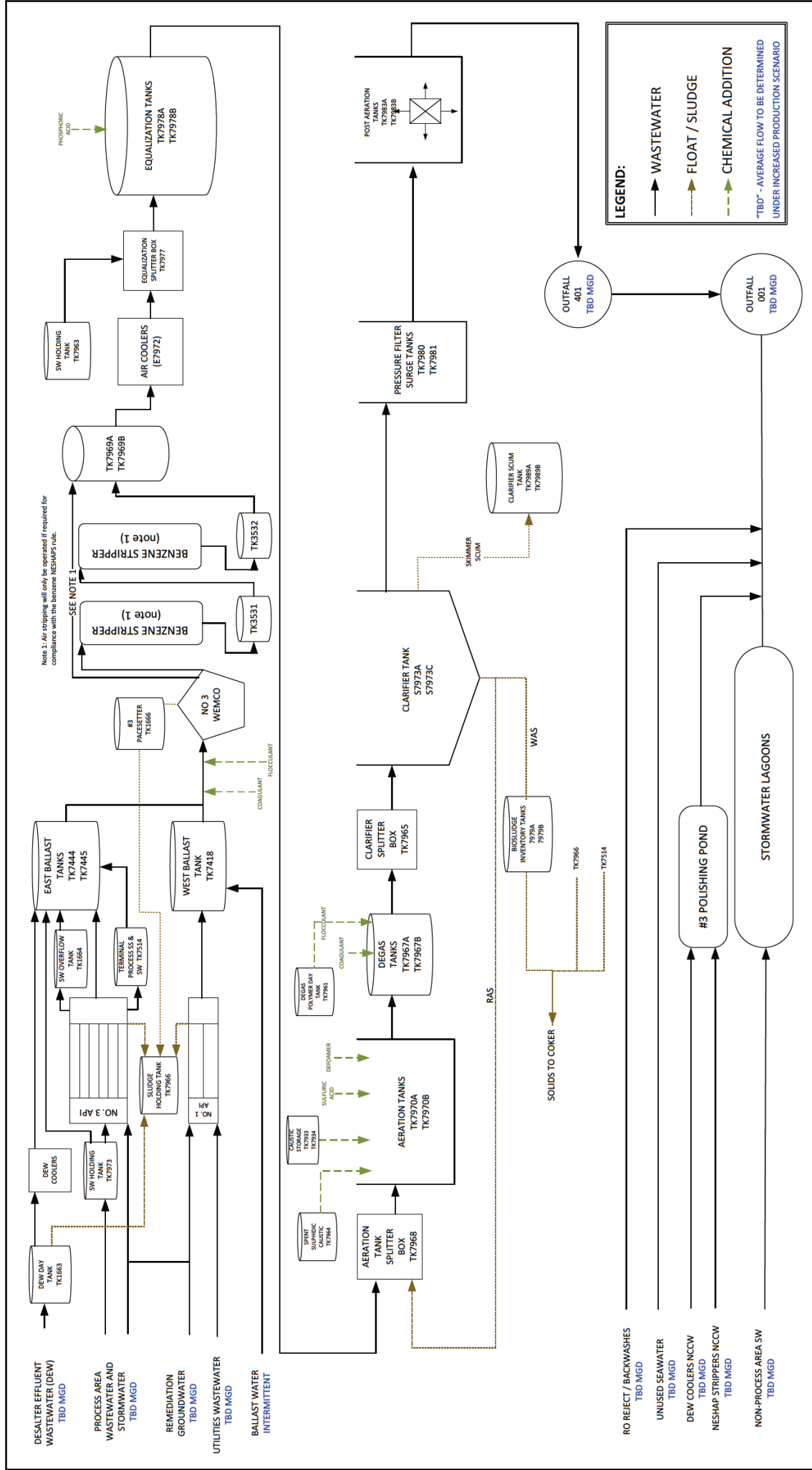
**PHASE A: INITIAL REFINERY STARTUP
WASTEWATER TREATMENT AND WATER BALANCE DIAGRAM**
LIMETREE BAY TERMINALS AND REFINING
ST. CROIX, U.S. VIRGIN ISLANDS

FIGURE 3.1

LimeTree Bay Refining and Terminals
Christiansted, U.S. Virgin Islands



NEICVP1416E01



PHASE B: INCREASED REFINERY PRODUCTION WASTEWATER TREATMENT AND WATER BALANCE DIAGRAM
 LIMETREE BAY TERMINALS AND REFINING
 ST. CROIX, U.S. VIRGIN ISLANDS

FIGURE 3.2

NEICVP1416E01

Appendix B

Page 277 of 88

Limetree Bay Refining and Terminals
 Christiansted, U.S. Virgin Islands

TABLE II.A. WASTEWATER TREATMENT SYSTEM (WWTS) TANK LISTING

| TANK ID NUMBER | TANK SERVICE DESCRIPTION | ROOF TYPE |
|-----------------------|-----------------------------------|------------------|
| TK-7933 | Caustic Storage | Cone |
| TK-7934 | Caustic Storage | Cone |
| Tk-7963 | Stormwater/Filtrate Sump | Open |
| TK-7514 | Terminal Process SS & SW | External Floater |
| TK-7969A | Collection Tank | Open |
| TK-7969B | Collection Tank | Open |
| TK-7970A | Aeration | Open |
| TK-7970B | Aeration | Open |
| TK-7979A | Bio-Sludge/Sludge Inventory Tanks | Open |
| TK-7979B | Bio-Sludge/Sludge Inventory Tanks | Open |
| TK-7980 | Filter Surge | Open |
| TK-7981 | Filter Surge | Open |
| TK-7967A | Degas Tank | Open |
| TK-7967B | Degas Tank | Open |
| TK-7978A | Equalization Tank | Open |
| TK-7978B | Equalization Tank | Open |
| TK-7983A | Post Aeration | Open |
| TK-7983B | Post Aeration | Open |
| TK-7968 | Aeration Splitter Box | Open |
| TK-7965 | Clarifier Splitter Box | Open |
| S-7973A | Clarifier | Open |
| S-7973C | Clarifier | Open |
| TK-3531 | Benzene Stripper Effluent | Open |
| TK-3532 | Benzene Stripper Effluent | Open |
| # 3 Wemco | # 3 Wemco Depurator | Closed |
| TK-7418 | Processed Water Storage Tank | Internal Floater |
| TK-7444 | Processed Water Storage Tank | External Floater |
| TK-7445 | Processed Water Storage Tank | External Floater |
| TK-1663 | Desalter Effluent | External Floater |
| TK-7977 | Equalization Splitter Box | Open |
| TK-7989A | Clarifier Scum Tank | Open |
| TK-7989B | Clarifier Scum Tank | Open |
| TK-7966 | Sludge Holding Tank | Internal Floater |
| TK-7973 | Storm Water Holding Tank | External Floater |
| Tk-1664 | # 3 API Storm Water Lift | Open |
| TK-1666 | #3 Pacesetter (Wemco Float) | Closed |
| Tk 7961 | Degas Polymer Day tank | Open |
| TK-7964 | Spent Sulphidic Caustic | Internal Floater |

TABLE III.C-1B. LIMETREE BAY TERMINALS AND REFINING UNIT CAPACITY PRODUCTION DATA FOR FORM C - PHASE A

| EPA PROCESS NO. | EPA PROCESS NAME | LBE PROCESS ID | PROCESS RATE Refinery Restart (1,000 Bbl/d) | WEIGHTING FACTOR (See Below) | PROCESS RATE / FEEDSTOCK RATE | UNIT PROCESS CONFIGURATION FACTOR |
|-----------------------|---|--|--|------------------------------------|--|--|
| 3 | CRUDE PROCESSES Vacuum Crude Distillation | #3 Vac Vac Sum | 90.0 90.0 | 1 | 0.50 | 0.50 |
| 2 | Crude Desalting | #5 CDU-D #6 CDU-D CDU Sum | 180.0 0.0 180.0 | 1 | 1.00 | 1 |
| 1 | Atmospheric Crude Distillation | #5A-CDU #6A-CDU A-CDU Sum | 180.0 0.0 180.0 | 1 | 1.00 | 1 |
| 1 | Feedstock: Purchased Fuel &/or Residual Oil | Util Frac | 36 | 1 | 0.20 | 0.20 |
| 11 | CRACKING AND COKING PROCESSES Hydroprocessing/ Hydrotreating Upstream Feedstock | #3 Hydrobon #4 Hydrobon | 30.0 50.0 | See Tables III.C-3 and III.C-4 | 1.39 | 8.33 |
| 54 | Hydroprocessing/Hydrotreating of Product | #6 DDU #7 DDU #9 DDU DDU Sum | 50.0 60.0 60.0 250.0 | | | |
| 15 | Delayed Coking | DCU | 62.0 | | | |
| 12 | REFORMING AND ALKYLATION PROCESSES Catalytic Reforming | #4 PLAT PLAT Sum | 46.0 46.0 | | 0.26 | 3.07 |
| | FEEDSTOCK RATE (1,000 Bbl/d) | | 180.0 | | TOTAL | 14.10 |

NOTES:

(1) WEIGHTING FACTOR

Based on the table in 40 CFR 419.42 (b) (3)

(2) SIZE FACTOR

Based on the table in 40 CFR 419.22 (b) (1), 419.23 (b) (1), or 419.24 (b) (1)

| 1,000 BBL OF FEEDSTOCK PER STREAM DAY | SIZE FACTOR |
|--|----------------|
| 150.0 or greater | 1.41 |

(3) PROCESS FACTOR

Based on the table in 40 CFR 419.22 (b) (2), 419.23 (b) (2), or 419.24 (b) (2)

| PROCESS CONFIGURATION FACTOR | PROCESS FACTOR |
|---------------------------------|-------------------|
| 9.5 or greater | 1.89 |

TABLE III.C-2. CALCULATION OF LIMETREE BAY TERMINALS AND REFINING LIMITS BY BPT, BAT AND BCT - PHASE A

| POLLUTANT | TYPE OF EFFLUENT LIMITATION (a) | DAILY MAXIMUM (lbs/1,000 Bbl of Feedstock) | MONTHLY AVERAGE (lbs/1,000 Bbl of Feedstock) | SIZE FACTOR | PROCESS FACTOR | FEEDSTOCK RATE (1,000 Bbl of Feedstock) | EFFLUENT LIMITATIONS BY BPT, BAT, & BCT | | CONTROLLING EFFLUENT LIMITATIONS | |
|---------------------|------------------------------------|---|---|-------------|----------------|--|---|------------------------------|----------------------------------|------------------------------|
| | | | | | | | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) |
| BOD5 | BPT, BCT | 9.9 | 5.5 | 1.41 | 1.89 | 180.0 | 4,748.85 | 2,638.25 | 4,748.9 | 2,638.3 |
| TSS | BPT, BCT | 6.9 | 4.4 | 1.41 | 1.89 | 180.0 | 3,309.81 | 2,110.60 | 3,309.8 | 2,110.6 |
| TOC (b) | BPT, BAT | 21.78 | 12.1 | 1.41 | 1.89 | 180.0 | 10,447.47 | 5,804.15 | 10,447.5 | 5,804.2 |
| Oil and Grease | BPT, BCT | 3 | 1.6 | 1.41 | 1.89 | 180.0 | 1,439.05 | 767.49 | 1,439.0 | 767.5 |
| Phenolic Compounds | BPT | 0.074 | 0.036 | 1.41 | 1.89 | 180.0 | 35.50 | 17.27 | 35.50 | 17.27 |
| Ammonia as N | BPT, BAT | 6.6 | 3 | 1.41 | 1.89 | 180.0 | 3,165.90 | 1,439.05 | 3,165.9 | 1,439.0 |
| Sulfide | BPT, BAT | 0.065 | 0.029 | 1.41 | 1.89 | 180.0 | 31.18 | 13.91 | 31.18 | 13.91 |
| Total Chromium | BPT | 0.15 | 0.088 | 1.41 | 1.89 | 180.0 | 71.95 | 42.21 | 71.95 | 42.21 |
| Hexavalent Chromium | BPT | 0.012 | 0.0056 | 1.41 | 1.89 | 180.0 | 5.76 | 2.69 | 5.76 | 2.69 |
| pH | BPT, BCT | (c) | (c) | (c) | (c) | (c) | 6.0 - 9.0 | 6.0 - 9.0 | 6.0 - 9.0 | 6.0 - 9.0 |

NOTES:

(a) Based on 40 CFR 419.22 (a), 419.23 (a), and 419.24 (a).

(b) TOC monitored in lieu of COD since chloride > 1,000 mg/L. Ratio of TOC to BOD5 is assumed to be 2.2. See 40 CFR 419.13 (d).

(c) Within the range 6.0 to 9.0 s.u.

TABLE III.C-3. LIMETREE BAY TERMINALS AND REFINING COKER CAPACITY - PHASE A

| EPA PROCESS NO. | EPA PROCESS NAME | LBE PROCESS ID | PROCESS RATE (1,000 Bbl/d) | WEIGHTING FACTOR (See Below) | PROCESS RATE / FEEDSTOCK RATE | PROCESS CONFIGURATION FACTOR |
|-----------------------|-------------------------------|----------------------|----------------------------------|------------------------------------|--|------------------------------------|
| 15 | CRACKING AND COKING PROCESSES | | 62.0 | 6 | 0.34 | 2.07 |
| | Delayed Coking | DCU | 62.0 | | | |
| | FEEDSTOCK RATE (1,000 Bbl/d) | | 62.0 | | TOTAL | 2.07 |

NOTES:

(1) **WEIGHTING FACTOR**
Based on the table in 40 CFR 419.42 (b) (3)

(2) **SIZE FACTOR**
Based on the table in 40 CFR 419.26 (b) (1)

| 1,000 BBL OF FEEDSTOCK PER STREAM DAY 50-74.9 | SIZE FACTOR 1.04 |
|---|------------------------|
|---|------------------------|

(3) **PROCESS FACTOR**
Based on the table in 40 CFR 419.26 (b) (2)

| PROCESS CONFIGURATION FACTOR Less than 2.49 | PROCESS FACTOR 0.58 |
|---|---------------------------|
|---|---------------------------|

TABLE III.C-4. CALCULATION OF LIMETREE BAY TERMINAL AND REFINING DCU LIMITS BY NSPS - PHASE A

| POLLUTANT | TYPE OF EFFLUENT LIMITATION (a) | DAILY MAXIMUM | MONTHLY AVERAGE | SIZE FACTOR | PROCESS FACTOR | FEEDSTOCK RATE (1,000 Bbl of Feedstock) | EFFLUENT LIMITATIONS | |
|---------------------|--|------------------------------|------------------------------|-------------|----------------|--|----------------------------|------------------------------|
| | | (lbs/1,000 Bbl of Feedstock) | (lbs/1,000 Bbl of Feedstock) | | | | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) |
| BOD5 | NSPS | 5.8 | 3.1 | 1.04 | 0.58 | 62.0 | 216.9 | 115.9 |
| TSS | NSPS | 4 | 2.5 | 1.04 | 0.58 | 62.0 | 149.6 | 93.5 |
| TOC (b) | NSPS | 12.76 | 6.82 | 1.04 | 0.58 | 62.0 | 477.2 | 255.1 |
| Oil and Grease | NSPS | 1.7 | 0.93 | 1.04 | 0.58 | 62.0 | 63.6 | 34.8 |
| Phenolic Compounds | NSPS | 0.042 | 0.020 | 1.04 | 0.58 | 62.0 | 1.57 | 0.75 |
| Ammonia as N | NSPS | 6.6 | 3.000 | 1.04 | 0.58 | 62.0 | 246.8 | 112.2 |
| Sulfide | NSPS | 0.037 | 0.017 | 1.04 | 0.58 | 62.0 | 1.4 | 0.6 |
| Total Chromium | NSPS | 0.084 | 0.049 | 1.04 | 0.58 | 62.0 | 3.14 | 1.83 |
| Hexavalent Chromium | NSPS | 0.0072 | 0.0032 | 1.04 | 0.58 | 62.0 | 0.27 | 0.12 |
| pH | NSPS | (c) | (c) | (c) | (c) | (c) | 6.0 - 9.0 | 6.0 - 9.0 |

NOTES:

(a) Based on 40 CFR 419.26 (a)

(b) TOC monitored in lieu of COD since chloride > 1,000 mg/L. Ratio of TOC to BOD5 is assumed to be 2.2. See 40 CFR 419.13 (d)

(c) Within the range 6.0 to 9.0 s.u.

TABLE III.C-5. SUMMARY OF LIMETREE BAY TERMINALS AND REFINING PERMIT LIMITS^(a) - PHASE A

| POLLUTANT | Coker NSPS | | PROJECTED TBELs | |
|---------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|
| | | | OUTFALL 001 | |
| | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) |
| BOD5 | 216.9 | 115.9 | 4,966 | 2,754 |
| TSS | 149.6 | 93.5 | 3,459 | 2,204 |
| TOC (b) | 477.2 | 255.1 | 10,925 | 6,059 |
| Oil and Grease | 63.6 | 34.8 | 1,503 | 802 |
| Phenolic Compounds | 1.57 | 0.75 | 37.1 | 18.0 |
| Ammonia as N | 246.8 | 112.2 | 3,413 | 1,551 |
| Sulfide | 1.38 | 0.64 | 32.6 | 14.5 |
| Total Chromium | 3.14 | 1.83 | 75.1 | 44.0 |
| Hexavalent Chromium | 0.27 | 0.12 | 6.03 | 2.81 |
| pH | | | 6.0 - 9.0 | 6.0 - 9.0 |

NOTES:

(a) Based on 40 CFR 419 Subpart C

(b) TOC monitored in lieu of COD since chloride > 1,000 mg/L. Ratio of TOC to BOD5 is assumed to be 2.2.
See 40 CFR 419.13 (d).

PURCHASED LIGHT/
HEAVY NAPHTHA

DESALTING
(#5 CDU-D)
180,000 BBL/D

CRUDE
OIL

ATMOSPHERIC
DISTILLATION
(#5A - CDU)
180,000 BBL/D

HEAVY NAPHTHA
HYDROTREATING/
HYDROPROCESSING
(#4 HYDROBON)
50,000 BBL/D

CATALYTIC REFORMING
(#4 PLAT)
46,000 BBL/D

REFORMATE

LIGHT NAPHTHA
HYDROTREATING/
HYDROPROCESSING
(#3 HYDROBON)
30,000 BBL/D

PAR-ISOMERIZATION

LIGHT NAPHTHA BLEND

PURCHASED HEAVY
FUEL OIL

UTILITY FRACTIONATOR
36,000 BBL/D

JET

VACUUM
DISTILLATION
(#3 VAC)
90,000 BBL/D

DIESEL HYDROTREATING/
HYDROPROCESSING
(DD7)
60,000 BBL/D

ULTRALOW SULFUR
DIESEL (ULSD)

GAS OIL HYDROTREATING/
HYDROPROCESSING
(DD6)
50,000 BBL/D

HIGH SULFUR VACUUM
GAS OIL (VGO)

KEROSENE HYDROTREATING/
HYDROPROCESSING
(DD9)
60,000 BBL/D

LOW SULFUR VACUUM
GAS OIL (VGO)

DELAYED COKING UNIT (DCU)
62,000 BBL/D



NEICVP1416E01

**PHASE A: INITIAL REFINERY STARTUP
PROCESS FLOW DIAGRAM**
LIMETREE BAY TERMINALS AND REFINING
ST. CROIX, U.S. VIRGIN ISLANDS

FIGURE 4.1

LimeTree Bay Refining and Terminals
Christiansted, US Virgin Islands

TABLE III.C-6. LIMETREE BAY TERMINALS AND REFINING UNIT CAPACITY PRODUCTION DATA FOR FORM C - PHASE B

| EPA PROCESS NO. | EPA PROCESS NAME | LBE PROCESS ID | PROCESS RATE Refinery Restart (1,000 Bbl/d) | WEIGHTING FACTOR (See Below) | PROCESS RATE / FEEDSTOCK RATE | UNIT PROCESS CONFIGURATION FACTOR |
|-----------------------|---|--|--|------------------------------------|--|--|
| 3 | CRUDE PROCESSES Vacuum Crude Distillation | #3 Vac Vac Sum | 90.0 90.0 | 1 | 0.25 | 0.25 |
| 2 | Crude Desalting | #5 CDU-D #6 CDU-D CDU Sum | 180.0 180.0 360.0 | 1 | 1.00 | 1 |
| 1 | Atmospheric Crude Distillation | #5A-CDU #6A-CDU A-CDU Sum | 180.0 180.0 360.0 | 1 | 1.00 | 1 |
| 1 | Feedstock: Purchased Fuel &/or Residual Oil | Util Frac | 36 | 1 | 0.10 | 0.10 |
| 11 | CRACKING AND COKING PROCESSES Hydroprocessing/ Hydrotreating Upstream Feedstock | #3 Hydrobon #4 Hydrobon | 30.0 50.0 | See Tables III.C-3 and III.C-4 | 0.69 | 4.17 |
| 54 | Hydroprocessing/Hydrotreating of Product | #6 DDU #7 DDU #9 DDU DDU Sum | 50.0 60.0 60.0 250.0 | | | |
| 15 | Delayed Coking | DCU | 62.0 | | | |
| 12 | REFORMING AND ALKYLATION PROCESSES Catalytic Reforming | #4 PLAT PLAT Sum | 46.0 46.0 | | | |
| | | | | | | |
| | FEEDSTOCK RATE (1,000 Bbl/d) | | 360.0 | | TOTAL | 8.05 |

NOTES:

(1) WEIGHTING FACTOR

Based on the table in 40 CFR 419.42 (b) (3)

(2) SIZE FACTOR

Based on the table in 40 CFR 419.22 (b) (1), 419.23 (b) (1), or 419.24 (b) (1)

| 1,000 BBL OF FEEDSTOCK PER STREAM DAY | SIZE FACTOR |
|--|----------------|
| 150.0 or greater | 1.41 |

(3) PROCESS FACTOR

Based on the table in 40 CFR 419.22 (b) (2), 419.23 (b) (2), or 419.24 (b) (2)

| PROCESS CONFIGURATION FACTOR | PROCESS FACTOR |
|---------------------------------|-------------------|
| 8.0 to 8.49 | 1.53 |

TABLE III.C-7. CALCULATION OF LIMETREE BAY TERMINALS AND REFINING LIMITS BY BPT, BAT AND BCT - PHASE B

| POLLUTANT | TYPE OF EFFLUENT LIMITATION (a) | DAILY MAXIMUM (lbs/1,000 Bbl of Feedstock) | MONTHLY AVERAGE (lbs/1,000 Bbl of Feedstock) | SIZE FACTOR | PROCESS FACTOR | FEEDSTOCK RATE (1,000 Bbl of Feedstock) | EFFLUENT LIMITATIONS BY BPT, BAT, & BCT | | CONTROLLING EFFLUENT LIMITATIONS | |
|---------------------|------------------------------------|---|---|-------------|----------------|--|---|------------------------------|----------------------------------|------------------------------|
| | | | | | | | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) |
| BOD5 | BPT, BCT | 9.9 | 5.5 | 1.41 | 1.53 | 360.0 | 7,688.62 | 4,271.45 | 7,688.6 | 4,271.5 |
| TSS | BPT, BCT | 6.9 | 4.4 | 1.41 | 1.53 | 360.0 | 5,358.73 | 3,417.16 | 5,358.7 | 3,417.2 |
| TOC (b) | BPT, BAT | 21.78 | 12.1 | 1.41 | 1.53 | 360.0 | 16,914.96 | 9,397.20 | 16,915.0 | 9,397.2 |
| Oil and Grease | BPT, BCT | 3 | 1.6 | 1.41 | 1.53 | 360.0 | 2,329.88 | 1,242.60 | 2,329.9 | 1,242.6 |
| Phenolic Compounds | BPT | 0.074 | 0.036 | 1.41 | 1.53 | 360.0 | 57.47 | 27.96 | 57.47 | 27.96 |
| Ammonia as N | BPT, BAT | 6.6 | 3 | 1.41 | 1.53 | 360.0 | 5,125.74 | 2,329.88 | 5,125.7 | 2,329.9 |
| Sulfide | BPT, BAT | 0.065 | 0.029 | 1.41 | 1.53 | 360.0 | 50.48 | 22.52 | 50.48 | 22.52 |
| Total Chromium | BPT | 0.15 | 0.088 | 1.41 | 1.53 | 360.0 | 116.49 | 68.34 | 116.49 | 68.34 |
| Hexavalent Chromium | BPT | 0.012 | 0.0056 | 1.41 | 1.53 | 360.0 | 9.32 | 4.35 | 9.32 | 4.35 |
| pH | BPT, BCT | (c) | (c) | (c) | (c) | (c) | 6.0 - 9.0 | 6.0 - 9.0 | 6.0 - 9.0 | 6.0 - 9.0 |

NOTES:

(a) Based on 40 CFR 419.22 (a), 419.23 (a), and 419.24 (a).

(b) TOC monitored in lieu of COD since chloride > 1,000 mg/L. Ratio of TOC to BOD5 is assumed to be 2.2. See 40 CFR 419.13 (d).

(c) Within the range 6.0 to 9.0 s.u.

TABLE III.C-8. LIMETREE BAY TERMINALS AND REFINING COKER CAPACITY - PHASE B

| EPA PROCESS NO. | EPA PROCESS NAME | LBE PROCESS ID | PROCESS RATE (1,000 Bbl/d) | WEIGHTING FACTOR (See Below) | PROCESS RATE / FEEDSTOCK RATE | PROCESS CONFIGURATION FACTOR |
|-----------------------|-------------------------------|----------------------|----------------------------------|------------------------------------|--|------------------------------------|
| 15 | CRACKING AND COKING PROCESSES | | 62.0 | 6 | 0.17 | 1.03 |
| | Delayed Coking | DCU | 62.0 | | | |
| | FEEDSTOCK RATE (1,000 Bbl/d) | | 62.0 | | TOTAL | 1.03 |

NOTES:

(1) **WEIGHTING FACTOR**
Based on the table in 40 CFR 419.42 (b) (3)

(2) **SIZE FACTOR**
Based on the table in 40 CFR 419.26 (b) (1)

| 1,000 BBL OF FEEDSTOCK PER STREAM DAY 50-74.9 | SIZE FACTOR 1.04 |
|---|------------------------|
|---|------------------------|

(3) **PROCESS FACTOR**
Based on the table in 40 CFR 419.26 (b) (2)

| PROCESS CONFIGURATION FACTOR Less than 2.49 | PROCESS FACTOR 0.58 |
|---|---------------------------|
|---|---------------------------|

TABLE III.C-9. CALCULATION OF LIMETREE BAY TERMINALS AND REFINING DCU LIMITS BY NSPS - PHASE B

| POLLUTANT | TYPE OF EFFLUENT LIMITATION (a) | DAILY MAXIMUM | MONTHLY AVERAGE | SIZE FACTOR | PROCESS FACTOR | FEEDSTOCK RATE | EFFLUENT LIMITATIONS | |
|---------------------|--|------------------------------|------------------------------|-------------|----------------|--------------------------|-------------------------|---------------------------|
| | | (lbs/1,000 Bbl of Feedstock) | (lbs/1,000 Bbl of Feedstock) | | | (1,000 Bbl of Feedstock) | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) |
| BOD5 | NSPS | 5.8 | 3.1 | 1.04 | 0.58 | 62.0 | 216.9 | 115.9 |
| TSS | NSPS | 4 | 2.5 | 1.04 | 0.58 | 62.0 | 149.6 | 93.5 |
| TOC (b) | NSPS | 12.76 | 6.82 | 1.04 | 0.58 | 62.0 | 477.2 | 255.1 |
| Oil and Grease | NSPS | 1.7 | 0.93 | 1.04 | 0.58 | 62.0 | 63.6 | 34.8 |
| Phenolic Compounds | NSPS | 0.042 | 0.020 | 1.04 | 0.58 | 62.0 | 1.57 | 0.75 |
| Ammonia as N | NSPS | 6.6 | 3.000 | 1.04 | 0.58 | 62.0 | 246.8 | 112.2 |
| Sulfide | NSPS | 0.037 | 0.017 | 1.04 | 0.58 | 62.0 | 1.4 | 0.6 |
| Total Chromium | NSPS | 0.084 | 0.049 | 1.04 | 0.58 | 62.0 | 3.14 | 1.83 |
| Hexavalent Chromium | NSPS | 0.0072 | 0.0032 | 1.04 | 0.58 | 62.0 | 0.27 | 0.12 |
| pH | NSPS | (c) | (c) | (c) | (c) | (c) | 6.0 - 9.0 | 6.0 - 9.0 |

NOTES:

(a) Based on 40 CFR 419.26 (a)

(b) TOC monitored in lieu of COD since chloride > 1,000 mg/L. Ratio of TOC to BOD5 is assumed to be 2.2. See 40 CFR 419.13 (d)

(c) Within the range 6.0 to 9.0 s.u.

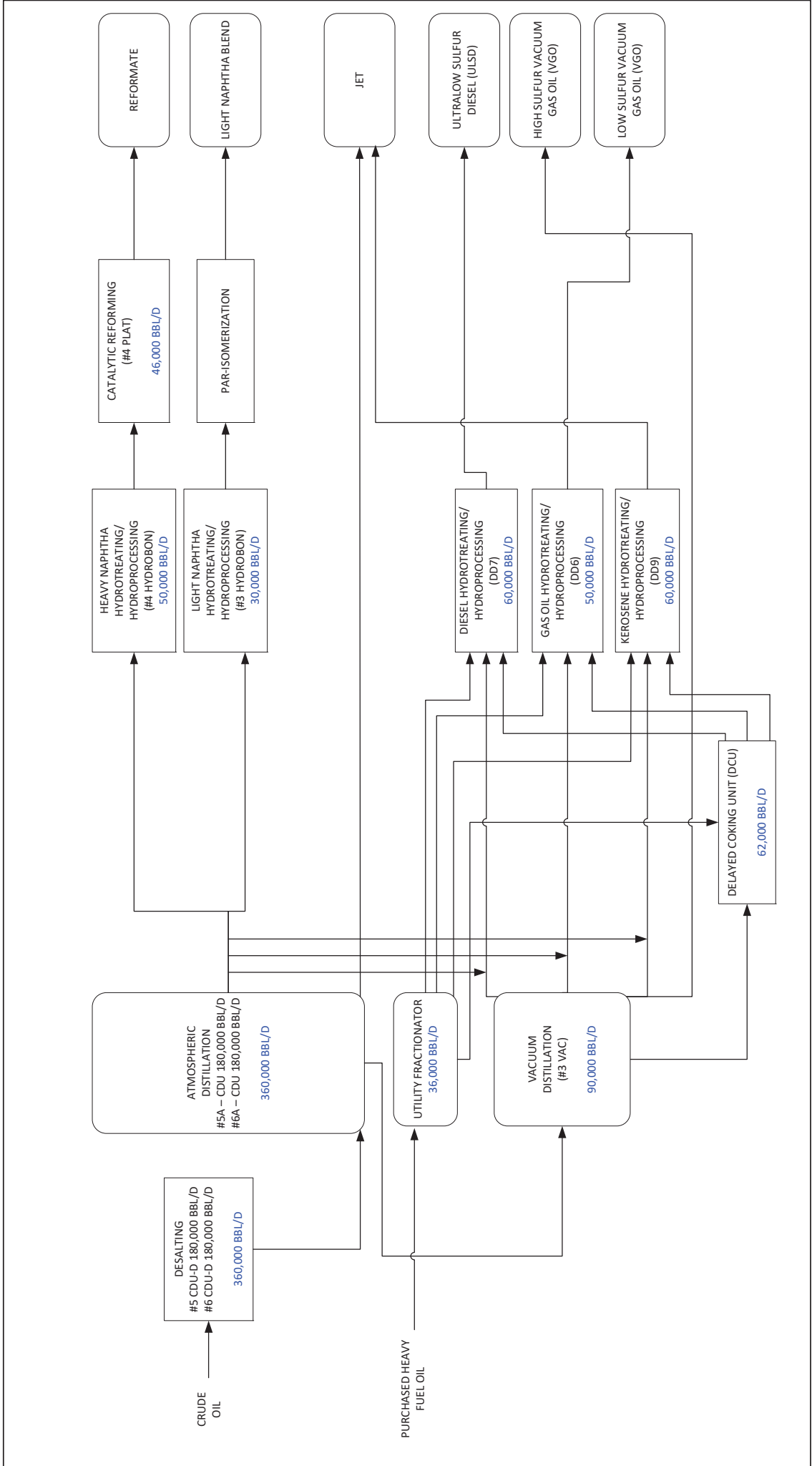
TABLE III.C-10. SUMMARY OF LIMETREE BAY TERMINALS AND REFINING PERMIT LIMITS^(a) - PHASE B


| POLLUTANT | Coker NSPS | | PROJECTED TBELs | |
|---------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|
| | | | OUTFALL 001 | |
| | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) | DAILY MAXIMUM (lbs/day) | MONTHLY AVERAGE (lbs/day) |
| BOD5 | 216.9 | 115.9 | 7,906 | 4,387 |
| TSS | 149.6 | 93.5 | 5,508 | 3,511 |
| TOC (b) | 477.2 | 255.1 | 17,392 | 9,652 |
| Oil and Grease | 63.6 | 34.8 | 2,393 | 1,277 |
| Phenolic Compounds | 1.57 | 0.75 | 59.0 | 28.7 |
| Ammonia as N | 246.8 | 112.2 | 5,373 | 2,442 |
| Sulfide | 1.38 | 0.64 | 51.9 | 23.2 |
| Total Chromium | 3.14 | 1.83 | 119.6 | 70.2 |
| Hexavalent Chromium | 0.27 | 0.12 | 9.59 | 4.47 |
| pH | | | 6.0 - 9.0 | 6.0 - 9.0 |

NOTES:

(a) Based on 40 CFR 419 Subpart C

(b) TOC monitored in lieu of COD since chloride > 1,000 mg/L. Ratio of TOC to BOD5 is assumed to be 2.2.
See 40 CFR 419.13 (d).





NEICVP1416E01

PHASE B: INCREASED REFINERY PRODUCTION
PROCESS FLOW DIAGRAM
LIMETREE BAY TERMINALS AND REFINING
ST. CROIX, U.S. VIRGIN ISLANDS

FIGURE 4.2

Limetree Bay Refining and Terminals
Christiansted, U.S. Virgin Islands

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.

EPA ID NUMBER (copy from Item 1 of Form 1)

110000307864

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

| 1. POLLUTANT (if available) | 2. EFFLUENT | | | | 3. UNITS (specify if blank) | | | 4. INTAKES (optional) | | OUTFALL NO. 001 (current) | |
|---|--|--------------------|---|-------------|--|-------------------------------------|--|-----------------------|----------------------------|---|--------------------|
| | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM AVG. VALUE (if available) | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS | a. LONG TERM CONCENTRATION | | b. NO. OF ANALYSES |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | | | | |
| a. Biochemical Oxygen Demand (BOD) | 14.3 (E) | 946 (E) | | | | 1 | mg/L | lb/day | | Available Seawater (Intake) data for select parameters is in Table V-I. | |
| b. Chemical Oxygen Demand (COD) | Analysis not possible - high chloride in sample matrix is a positive interference. | | | | | | | | | | |
| c. Total Organic Carbon (TOC) | 6.5 | 550 | | | | 1 | mg/L | lb/day | | | |
| d. Total Suspended Solids (TSS) | 6.8 | 576 | | | | 1 | mg/L | lb/day | | | |
| e. Ammonia (as N) | 0.15 | 13 | | | | 1 | mg/L | lb/day | | | |
| f. Flow | VALUE | VALUE | VALUE | VALUE | | | | VALUE | | | |
| g. Temperature (winter) | 25.89 | 13.15 | VALUE | 7.13 | | 1085 individual; 37 for monthly ave | MGD | | | | |
| h. Temperature (summer) | 99.10 | 89.29 | VALUE | 86.06 | | 423 individual; 14 for monthly ave | °F | | | | |
| | 98.80 | 94.12 | VALUE | 90.86 | | 729 individual; 24 for monthly ave | °F | | | | |
| i. pH | MINIMUM 6.8 | MAXIMUM 8.5 | MINIMUM 7.8 | MAXIMUM 8.3 | | 1150 individual; 38 for monthly ave | STANDARD UNITS | | | | |
| PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitation guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements. | | | | | | | | | | | |
| 1. POLLUTANT AND CAS NO. (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | 4. UNITS | | 5. INTAKE (optional) | | |
| | a. BELIEVED PRESENT | b. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE (1) CONCENTRATION | (2) MASS | b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION | (2) MASS | c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION | (2) MASS | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS |
| a. Bromide (24959-67-9) | X | | 39.1 | 3,307 | | | | | 1 | mg/L | lb/d |
| b. Chlorine, Total Residual | | X | | | | | | | 0 | | |
| c. Color | X | | 10 H | | | | | | 1 | PCU | |
| d. Fecal Coliform | | X | < 1.0 H, T | | | | | | 1 | col/100mL | |
| e. Fluoride (16984-48-8) | X | | < 1.7 | | | | | | 1 | mg/L | |
| f. Nitrate-Nitrite (as N) | X | | 0.85 | 72 | | | | | 1 | mg/L | lb/d |

Notes:

"H" indicates the sample analysis was performed outside of the allowed hold time.

"T" indicates the sample was received outside the required temperature range.

(A) Utilized current Outfall 001 TOC result*2.2 for estimated current Outfall 001 BOD result. This ratio of TOC to BOD is based on 40 CFR 419.13 (d). Current Outfall 001 BOD was non-detected at <100 mg/L. All the BOD dilutions failed to deplete the method-required 2 mg O2/L. Only a "less than" result could be calculated from the least dilute preparation.

| 1. POLLUTANT AND CAS NO. (if available) | 2. MARK 'X' | | 3. EFFLUENT | | | | 4. UNITS | | 5. NTAKE (optional) | | |
|---|------------------------|-----------------------|------------------------|----------|---|----------|--|-----------------------|-------------------------|----------|-----------------------|
| | a. BELIEVED PRESENT | b. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM AVRG VALUES (if available) | d. NO. OF ANALYSES | a. LONG TERM AVG. VALUE | | b. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | (1) CONCENTRATION | (2) MASS | |
| g. Nitrogen, Total Organic (as N) | X | | 0.36 J | 30.4 J | | | | 1 | mg/L | lb/d | |
| h. Oil and Grease | X | | < 3.4 | | | | < 2.2 | 2 | mg/L | | |
| i. Phosphorus (as P), Total (7723-14-0) | X | | 0.030 | 2.5 | | | | 1 | mg/L | lb/d | |
| j. Radioactivity | | | | | | | | | | | |
| (1) Alpha, Total | | X | | | | | | | | | |
| (2) Beta, Total | | X | | | | | | | | | |
| (3) Radium, Total | | X | | | | | | | | | |
| (4) Radium 226, Total | | X | | | | | | | | | |
| k. Sulfate (as SO4) (14808-79-8) | X | | 1,540 | 130,234 | | | | 1 | mg/L | lb/d | |
| l. Sulfide (as S) | X | | 0.35 | 54 | | | 0.64 | 2 | mg/L | lb/d | |
| m. Sulfite (as SO3) (14265-45-3) | | X | | | | | | 0 | | | |
| n. Surfactants | X | | < 0.1 H, T | | | | | 1 | mg/L | | |
| o. Aluminum, Total (7429-90-5) | X | | 0.0512 J | 4.3 J | | | | 1 | mg/L | lb/d | |
| p. Barium, Total (7440-39-3) | X | | 0.0324 | 2.7 | | | | 1 | mg/L | lb/d | |
| q. Boron, Total (7440-48-4) | X | | 3.19 | 270 | | | | 1 | mg/L | lb/d | |
| r. Cobalt, Total (7440-48-4) | X | | < 0.0050 | | | | | 1 | mg/L | | |
| s. Iron, Total (7439-89-6) | X | | 0.0666 | 5.6 | | | | 1 | mg/L | lb/d | |
| t. Magnesium, Total (7439-95-4) | X | | 80.9 | 68,415 | | | | 1 | mg/L | lb/d | |
| u. Molybdenum, Total (7439-98-7) | X | | 0.011 | 0.93 | | | | 1 | mg/L | lb/d | |
| v. Manganese, Total (7439-96-5) | X | | 0.010 | 0.85 | | | | 1 | mg/L | lb/d | |
| w. Tin, Total (7440-31-5) | | X | < 0.0401 | | | | | 1 | mg/L | | |
| x. Titanium, Total (7440-32-6) | | X | < 0.0384 | | | | | 1 | mg/L | | |

Available Seawater (Intake)
data for select parameters
is in Table V-I.

Notes:

J indicates an estimated value between the method detection limit and reporting limit.

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark in column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that here are 7 pages to this part; please review each carefully. Complete on table (all 7 pages) for each outfall. See instructions for additional details and requirements.

| 1. POLLUTANT AND CAS NUMBERS (if available) | | 2. MARK "X" | | | 3. EFFLUENT | | | | 4. UNITS | | 5. INTAKE (optional) | | | |
|--|--|---------------------|---------------------|--------------------|------------------------|----------|---|--------------------|----------|--------------------|----------------------------|----------|--------------------|---|
| | | a. TESTING REQUIRED | b. BELIEVED PRESENT | c. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | c. LONG TERM VALUE | | d. NO. OF ANALYSES | a. LONG TERM AVERAGE VALUE | | b. NO. OF ANALYSES | |
| | | | | | (1) CONCENTRATION | (2) MASS | | (1) CONCENTRATION | (2) MASS | | (1) CONCENTRATION | (2) MASS | | |
| METALS, CYANIDE, AND TOTAL PHENOLS | | | | | | | | | | | | | | |
| 1M. Antimony, Total (7440-36-0) | | X | X | | 5.7 | 0.48 | | | | 1 | µg/L | lb/d | | Available Seawater (Intake) data for select parameters is in Table V-I. |
| 2M. Arsenic, Total (7440-38-2) | | X | X | | 14.6 | 0.79 | | 6.5 | 0.39 | 3 | µg/L | lb/d | | |
| 3M. Beryllium, Total (7440-41-7) | | X | | X | < 0.070 | | | | | 1 | µg/L | | | |
| 4M. Cadmium, Total (7440-43-9) | | X | | X | < 0.050 | | | | | 1 | µg/L | | | |
| 5M. Chromium, Total (7440-47-3) | | X | X | | 0.56 J | 0.047 J | | | | 1 | µg/L | lb/d | | |
| 6M. Copper, Total (7440-50-8) | | X | X | | 2.73 | 0.18 | | 1.92 | 0.14 | 2 | µg/L | lb/d | | |
| 7M. Lead, Total (7439-92-1) | | X | | X | < 0.50 | | | | | 1 | µg/L | | | |
| 8M. Mercury, Total (7439-97-6) | | X | X | | < 0.075 | | | | | 1 | µg/L | | | |
| 9M. Nickel, Total (7440-02-0) | | X | X | | 5.64 | 0.37 | | 4.47 | 0.33 | 2 | µg/L | lb/d | | |
| 10M. Selenium, Total (7782-49-2) | | X | X | | 3.9 | 0.33 | | | | 1 | µg/L | lb/d | | |
| 11M. Silver, Total (7440-22-4) | | X | | X | < 0.050 | | | | | 1 | µg/L | | | |
| 12M. Thallium, Total (7440-28-0) | | X | | X | < 0.50 | | | | | 1 | µg/L | | | |
| 13M. Zinc, Total (7440-66-6) | | X | X | | 7.0 | 0.59 | | | | 1 | µg/L | lb/d | | |
| 14M. Cyanide, Total (57-12-5) | | X | | X | < 5.0 | | | | | 1 | µg/L | | | |
| 15M. Phenols, total | | X | X | | 3.9 (E) | 0.43 (E) | | | | 0 | µg/L | lb/d | | |

Available Seawater (Intake) data for select parameters is in Table V-I.

| | | | | | | | | | | | |
|---|--|---|------------------|--|--|--|--|--|--|--|--|
| DIOXIN | | | DESCRIBE RESULTS | | | | | | | | |
| 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6) | | X | | | | | | | | | |

Notes:
 "J" indicates an estimated value between the method detection limit and reporting limit.
 "E" indicates that the value is an estimate based on the maximum mass for Outfall401 and the maximum monthly average Outfall 001 flow.

| 1. POLLUTANT AND CAS NUMBERS (if available) | 2. MARK "X" | | 3. EFFLUENT | | | | | | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES | | |
|--|------------------|---------------------|--------------------|--|-----------|---|----------|--------------------------------------|----------|--------------------|----------------------|---------|--------------------|----------------------------|----------|
| | TESTING REQUIRED | b. BELIEVED PRESENT | c. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM VALUE (if available) | | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS | | a. LONG TERM AVERAGE VALUE | |
| | | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | | (1) CONCENTRATION | (2) MASS |
| GC/MS FRACTION - VOLATILE COMPOUNDS | | | | | | | | | | | | | | | |
| 1V. Acrolein (107-02-8) | X | | X | < 6.2 | | | | | | | 1 | µg/L | | | |
| 2V. Acrylonitrile (107-13-1) | X | | X | < 5.0 | | | | < 4.4 | | | 2 | µg/L | | | |
| 3V. Benzene (71-43-2) | X | | X | 0.56 J * | 0.047 J * | | | | 2.8 | 0.16 | 2 | µg/L | lb/d | | |
| 4V. Bis (Chloromethyl) Ether (542-88-1) | | | X | Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutants List | | | | | | | | | | | |
| 5V. Bromoform (75-25-2) | X | | X | < 5.0 | | | | | < 3.8 | | 2 | µg/L | | | |
| 6V. Carbon Tetrachloride (56-23-5) | X | | X | < 5.0 | | | | | < 3.1 | | 2 | µg/L | | | |
| 7V. Chlorobenzene (108-90-7) | X | | X | < 5.0 | | | | | < 2.7 | | 2 | µg/L | | | |
| 8V. Chlorodibromomethane (124-48-1) | X | | X | < 5.0 | | | | | < 2.7 | | 2 | µg/L | | | |
| 9V. Chloroethane (75-00-3) | X | | X | < 5.0 | | | | | < 4.4 | | 2 | µg/L | | | |
| 10V. 2-Chloro-ethylvinyl Ether (110-75-8) | X | | X | < 1.4 | | | | | | | 1 | µg/L | | | |
| 11V. Chloroform (67-66-3) | X | | X | < 5.0 | | | | | < 2.7 | | 2 | µg/L | | | |
| 12V. Dichlorobromomethane (75-27-4) | X | | X | < 5.0 | | | | | < 2.6 | | 2 | µg/L | | | |
| 13V. Dichlorodifluoromethane (75-71-8) | | | X | Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutants List | | | | | | | | | | 0 | |
| 14V. 1,1-Dichloroethane (75-34-3) | X | | X | < 5.0 | | | | | < 2.7 | | 2 | µg/L | | | |
| 15V. 1,2-Dichloroethane (107-06-2) | X | | X | < 5.0 | | | | | < 2.6 | | 2 | µg/L | | | |
| 16V. 1,1-Dichloroethylene (75-35-4) | X | | X | < 5.0 | | | | | < 2.6 | | 2 | µg/L | | | |
| 17V. 1,2-Dichloropropane (78-87-5) | X | | X | < 5.0 | | | | | < 2.6 | | 2 | µg/L | | | |
| 18V. 1,3-Dichloropropylene (542-75-6) | X | | X | < 5.0 | | | | | < 2.6 | | 2 | µg/L | | | |
| 19V. Ethylbenzene (100-41-4) | X | | X | < 5.0 | | | | | < 2.7 | | 2 | µg/L | | | |
| 20V. Methyl Bromide (74-83-9) | X | | X | < 5.0 | | | | | < 4.5 | | 2 | µg/L | | | |
| 21V. Methyl Chloride (74-87-3) | X | | X | < 5.0 | | | | | < 3.0 | | 2 | µg/L | | | |

Notes: *J* indicates an estimated value between the method detection limit and reporting limit.

* The maximum benzene result was a non-detect value (< 5 µg/L). The listed maximum values are for the maximum detected result which was a J flagged estimated value (0.56 J µg/L) between the method detection limit and reporting limit.

| CONTINUED FROM PAGE V-4 | | | | EPA I.D. NUMBER (copy from Item 1 of Form 1) | | | | OUTFALL NUMBER | | | | |
|---|---|------------------|---------------------|--|---|---|--|----------------|--|----------------------|---|--------------------|
| | | | | 110000307864 | | | | 001 (current) | | | | |
| 1. POLLUTANT AND CAS NUMBERS (if available) | | 2. MARK "X" | | 3. EFFLUENT | | | | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES |
| | | TESTING REQUIRED | b. BELIEVED PRESENT | c. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE (1) CONCENTRATION | b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION (2) MASS | c. LONG TERM VALUE (if available) (1) CONCENTRATION (2) MASS | | | d. NO. OF ANALYSES | a. LONG TERM AVERAGE VALUE (1) CONCENTRATION (2) MASS | |
| GC/MS FRACTION - VOLATILE COMPOUNDS-CONTINUED | | | | | | | | | | | | |
| 22V. Methylene Chloride (75-09-2) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 23V. 1,1,2,2-Tetrachloroethane (79-34-5) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 24V. Tetrachloroethylene (127-18-4) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 25V. Toluene (108-88-3) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 26V. 1,2-Trans-Dichloroethylene (156-60-5) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 27V. 1,1,1-Trichloroethane (71-55-6) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 28V. 1,1,2-Trichloroethane (79-00-5) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 29V. Trichloroethylene (79-01-6) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| 30V. Trichlorofluoromethane (75-68-4) | | | X | < 5.0 | Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutants List. | | | | | | | |
| 31V. Vinyl Chloride (75-01-4) | X | | X | < 5.0 | | | | | | µg/L | 2 | |
| GC/MS FRACTION - ACID COMPOUNDS | | | | | | | | | | | | |
| 1A. 2-Chlorophenol (95-57-8) | X | | X | < 5.32 | | | | | | µg/L | 2 | |
| 2A. 2,4-Dichlorophenol (120-83-2) | X | | X | < 5.32 | | | | | | µg/L | 2 | |
| 3A. 2,4-Dimethylphenol (105-67-9) | X | | X | < 5.32 | | | | | | µg/L | 2 | |
| 4A. 4,6-Dinitro-O-Cresol (534-52-1) | X | | X | < 31.9 | | | | | | µg/L | 2 | |
| 5A. 2,4-Dinitrophenol (51-28-5) | X | | X | < 53.2 | | | | | | µg/L | 2 | |
| 6A. 2-Nitrophenol (68-75-5) | X | | X | < 5.32 | | | | | | µg/L | 2 | |
| 7A. 4-Nitrophenol (100-02-7) | X | | X | < 5.32 | | | | | | µg/L | 2 | |
| 8A. P-Chloro-M-Cresol (59-50-7) | X | | X | < 5.32 | | | | | | µg/L | 2 | |
| 9A. Pentachlorophenol (87086-5) | X | | X | < 10.6 | | | | | | µg/L | 2 | |
| 10A. Phenol (108-95-2) | X | | X | < 5.32 | | | | | | µg/L | 2 | |
| 11A. 2,4,6-Trichlorophenol (88-06-2) | X | | X | < 5.32 | | | | | | µg/L | 2 | |

Notes:
 "H1" indicates that one of the two results was associated with a sample analysis was performed outside of the allowed hold time.

| CONTINUED FROM PAGE V-5 | | | | | | | | | | EPA ID NUMBER (copy from Item 1 of Form 1) | | OUTFALL NUMBER | | | | | | | | | |
|---|--|--|--|---------------------|--|--------------------|--|--|--|--|--|----------------------|--|---------------|--|-------------------|--|------------------|--|--------------------|--|
| 1. POLLUTANT AND CAS NUMBERS (if available) | | | | | | | | | | 110000307864 | | | | 001 (current) | | | | | | | |
| TESTING REQUIRED | | 2. MARK "X" | | b. BELIEVED PRESENT | | c. BELIEVED ABSENT | | 3. EFFLUENT | | 4. UNITS | | 5. INTAKE (optional) | | | | | | | | | |
| | | | | | | | | b. MAXIMUM 30 DAY VALUE (if available) | | | | | | | | | | | | | |
| GC/MS FRACTION-BASE/NEUTRAL COMPOUNDS | | a. MAXIMUM DAILY VALUE (1) CONCENTRATION | | (2) MASS | | (1) CONCENTRATION | | (2) MASS | | d. NO. OF ANALYSES | | a. CONCENTRATION | | b. MASS | | (1) CONCENTRATION | | a. AVERAGE VALUE | | b. NO. OF ANALYSES | |
| | | | | | | | | | | | | | | | | | | | | | |
| 1B. Acenaphthene (83-32-9) | | X | | X | | X | | | | | | | | | | | | | | | |
| 2B. Acenaphthylene (206-96-8) | | X | | X | | X | | | | | | | | | | | | | | | |
| 3B. Anthracene (120-12-7) | | X | | X | | X | | | | | | | | | | | | | | | |
| 4B. Benzidine (92-87-6) | | X | | X | | X | | | | | | | | | | | | | | | |
| 5B. Benzo (a) Anthracene (56-55-3) | | X | | X | | X | | | | | | | | | | | | | | | |
| 6B. Benzo (a) Pyrene (50-32-08) | | X | | X | | X | | | | | | | | | | | | | | | |
| 7B. 3,4-Benzo-fluoranthene (205-99-2) | | X | | X | | X | | | | | | | | | | | | | | | |
| 8B. Benzo (ghi) Perylene (191-24-2) | | X | | X | | X | | | | | | | | | | | | | | | |
| 9B. Benzo (k) Fluoranthene (207-08-9) | | X | | X | | X | | | | | | | | | | | | | | | |
| 10B. Bis (2-Chloroethoxy) Methane (111-91-1) | | X | | X | | X | | | | | | | | | | | | | | | |
| 11B. Bis (2-Chloroethyl) Ether (111-44-4) | | X | | X | | X | | | | | | | | | | | | | | | |
| 12B. Bis (2-Chloroisopropyl) Ether (102-60-1) | | X | | X | | X | | | | | | | | | | | | | | | |
| 13B. Bis (2-Ethylhexyl) Phthalate (117-81-7) | | X | | X * | | X * | | | | | | | | | | | | | | | |
| 14B. 4-Bromo-phenyl Phenyl Ether (101-55-3) | | X | | X | | X | | | | | | | | | | | | | | | |
| 15B. Butyl Benzyl Phthalate (85-68-7) | | X | | X * | | X * | | | | | | | | | | | | | | | |
| 16B. 2-Chloronaphthalene (91-58-7) | | X | | X | | X | | | | | | | | | | | | | | | |
| 17B. 4-Chlorophenyl Phenyl Ether (7005-72-3) | | X | | X | | X | | | | | | | | | | | | | | | |
| 18B. Chrysene (218-01-9) | | X | | X | | X | | | | | | | | | | | | | | | |
| 19B. Dibenzo (a, h) Anthracene (53-70-3) | | X | | X | | X | | | | | | | | | | | | | | | |
| 20B. 1,2-Dichlorobenzene (95-50-1) | | X | | X | | X | | | | | | | | | | | | | | | |
| 21B. 1,3-Dichlorobenzene (541-73-1) | | X | | X | | X | | | | | | | | | | | | | | | |

Notes:

*F indicates an estimated value between the method detection limit and reporting limit.

*H indicates the sample analysis was performed outside of the allowed hold time.

*H1 indicates that one of the two results was associated with a sample analysis was performed outside of the allowed hold time.

* Bis(2-Ethylhexyl) Phthalate and Butyl Benzyl Phthalate believed not present. The detections are believed due to incidental contamination from sampling tubing. Results were a mix of non-detects and detects: < 5.32 µg/L and 110 µg/L for bis(2-ethylhexyl) phthalate and < 5.32 and 1.1 µg/L for butyl benzyl phthalate.

| CONTINUED FROM PAGE V-6 | | | | EPA I.D. NUMBER (copy from Item 1 of Form 1) | | | | OUTFALL NUMBER | | | |
|--|-------------------|----------------------|---------------------|--|----------|--|----------|-----------------------------------|-----------------------|--|--|
| 1. POLLUTANT AND CAS NUMBERS (if available) | | 2. MARK "X" | | 110000307864 | | | | 001 (current) | | | |
| GC/MS FRACTION BASE/NEUTRAL COMPOUNDS (continued) | TEST-ING REQUIRED | b. BE-LIEVED PRESENT | c. BE-LIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM VALUE (if available) | | | |
| | | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | |
| 22B. 1,4-Dichlorobenzene (106-46-7) | X | | X | < 5.00 | | | | | < 2.64 | | |
| 23B. 3,3'-Dichlorobenzidine (91-94-1) | X | | X | < 5.32 | | | | | < 3.71 H1 | | |
| 24B. Diethyl Phthalate (84-66-2) | X | | X | < 5.32 | | | | | < 2.91 H1 | | |
| 25B. Dimethyl Phthalate (131-11-3) | X | | X | < 5.32 | | | | | < 3.04 H1 | | |
| 26B. Di-N-Butyl Phthalate (84-74-2) | X | | X * | 1.4 H; J; * 0.12 H; J; * | | | | | 3.36 H1; * 3.36 H1; * | | |
| 27B. 2,4-Dinitrotoluene (121-14-2) | X | | X | < 5.32 | | | | | < 3.10 H1 | | |
| 28B. 2,6-Dinitrotoluene (606-20-20) | X | | X | < 5.32 | | | | | < 3.14 H1 | | |
| 29B. Di-N-Octyl Phthalate (117-84-0) | X | | X | < 5.32 | | | | | < 2.99 H1 | | |
| 30B. 1,2-Diphenylhydrazine (as Azo-benzene) (122-66-7) | X | | X | < 5.32 | | | | | | | |
| 31B. Fluoranthene (206-44-0) | X | | X | < 5.32 | | | | | < 2.72 H1 | | |
| 32B. Fluorene (86-73-7) | X | | X | < 5.32 | | | | | < 2.73 H1 | | |
| 33B. Hexachlorobenzene (118-74-1) | X | | X | < 5.32 | | | | | < 3.02 H1 | | |
| 34B. Hexachlorobutadiene (87-68-3) | X | | X | < 5.32 | | | | | < 3.12 H1 | | |
| 35B. Hexachlorocyclopentadiene (77-47-4) | X | | X | < 5.32 | | | | | < 3.09 H1 | | |
| 36B. Hexachloroethane (67-72-2) | X | | X | < 5.32 | | | | | < 3.21 H1 | | |
| 37B. Indeno (1,2,3-cd) Pyrene (193-39-5) | X | | X | < 5.32 | | | | | < 2.76 H1 | | |
| 38B. Isophorone (78-59-1) | X | | X | < 5.32 | | | | | < 3.10 H1 | | |
| 39B. Naphthalene (91-20-3) | X | | X | < 5.32 | | | | | < 2.82 H1 | | |
| 40B. Nitrobenzene (98-95-3) | X | | X | < 5.32 | | | | | < 3.21 H1 | | |
| 41B. N-Nitrosodimethylamine (62-75-9) | X | | X | < 5.32 | | | | | < 3.11 H1 | | |
| 42B. N-Nitrosodi-N-Propylamine (621-41-7) | X | | X | < 5.32 | | | | | < 3.15 H1 | | |

Notes:
 *H1 indicates the sample analysis was performed outside of the allowed hold time.
 *H11 indicates that one of the two results was associated with a sample analysis was performed outside of the allowed hold time.

J indicates an estimated value between the method detection limit and reporting limit.
 *DI-N-Butyl Phthalate believed not present. Results for were a mix of non-detects and detects: < 5.32 µg/L and 1.4 µg/L. The detection is believed due to incidental contamination from sampling tubing.

| EPA I.D. NUMBER (copy from Item I of Form 1) | | | | OUTFALL NUMBER | | | | | | | |
|---|---------------------|--------------------|------------------------|----------------|--|----------|---|----------------------|--------------------|----------------------------|----------|
| 110000307864 | | | | 001 (current) | | | | | | | |
| 1. POLLUTANT AND CAS NUMBERS (if available) | | 2. MARK "X" | | 3. EFFLUENT | | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES | |
| a. TESTING REQUIRED | b. BELIEVED PRESENT | c. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM AVRG. VALUE (if available) | | d. NO. OF ANALYSES | a. LONG TERM AVERAGE VALUE | |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | (1) CONCENTRATION | (2) MASS |
| GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued) | | | | | | | | | | | |
| 43B. N-Nitrosodiphenylamine (86-30-6) | X | | X | < 5.32 | | | | < 3.15 H1 | | 2 | µg/L |
| 44B. Phenanthrene (85-01-8) | X | | X | < 5.32 | | | | < 2.76 H1 | | 2 | µg/L |
| 45B. Pyrene (129-00-0) | X | | X | < 5.32 | | | | < 2.72 H1 | | 2 | µg/L |
| 46B. 1,2,4-Trichlorobenzene (120-82-1) | X | | X | < 5.32 | | | | < 3.14 H1 | | 2 | µg/L |
| GC/MS FRACTION - PESTICIDES | | | | | | | | | | | |
| 1P. Aldrin (309-00-2) | X | | X | < 0.0057 | | | | | | 1 | µg/L |
| 2P. α-BHC (319-84-6) | X | | X | < 0.0038 | | | | | | 1 | µg/L |
| 3P. β-BHC (319-85-7) | X | | X | < 0.0057 | | | | | | 1 | µg/L |
| 4P. γ-BHC (58-89-9) | X | | X | < 0.0038 | | | | | | 1 | µg/L |
| 5P. δ-BHC (319-86-6) | X | | X | < 0.0057 | | | | | | 1 | µg/L |
| 6P. Chlordane (57-74-9) | X | | X | < 0.17 | | | | | | 1 | µg/L |
| 7P. 4,4'-DDT (50-29-3) | X | | X | < 0.0047 | | | | | | 1 | µg/L |
| 8P. 4,4'-DDE (72-55-9) | X | | X | < 0.0075 | | | | | | 1 | µg/L |
| 9P. 4,4'-DDD (72-54-8) | X | | X | < 0.0047 | | | | | | 1 | µg/L |
| 10P. Dieldrin (60-57-1) | X | | X | < 0.0047 | | | | | | 1 | µg/L |
| 11P. α-Endosulfan (115-29-7) | X | | X | < 0.0047 | | | | | | 1 | µg/L |
| 12P. β-Endosulfan (115-29-7) | X | | X | < 0.0038 | | | | | | 1 | µg/L |
| 13P. Endosulfan Sulfate (1031-07-8) | X | | X | < 0.0038 | | | | | | 1 | µg/L |
| 14P. Endrin (72-20-8) | X | | X | < 0.0057 | | | | | | 1 | µg/L |
| 15P. Endrin Aldehyde (7421-93-4) | X | | X | < 0.0075 | | | | | | 1 | µg/L |
| 16P. Heptachlor (76-44-8) | X | | X | < 0.0057 | | | | | | 1 | µg/L |

Notes:

H1 indicates that one of the two results was associated with a sample analysis was performed outside of the allowed hold time.

CONTINUED FROM PAGE V-8

| 1. POLLUTANT AND CAS NUMBERS (if available) | | 2. MARK "X" | | 3. EFFLUENT | | | | 4. UNITS | | 5. INTAKE (optional) | | |
|--|----------------------|---------------------|------------------------|-------------|---|----------|--------------------------------------|----------|------------------|----------------------|---|--------------------|
| TEST-ING RE-QU RED. | b. BE-LIEVED PRESENT | c. BE-LIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM VALUE (if available) | | a. CONCENTRATION | b. MASS | a. LONG TERM AVERAGE VALUE (1) CONCENTRATION | b. NO. OF ANALYSES |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | |
| GC/MS FRACTION PESTICIDES (continued) | | | | | | | | | | | | |
| 17P. Heptachlor Epoxide (1024-57-3) | X | | X | < 0.0057 | | | | | 1 | µg/L | | |
| 18P. PCB-1242 (53469-21-9) | X | | X | < 0.12 | | | | | 1 | µg/L | | |
| 19P. PCB-1254 (11097-69-1) | X | | X | < 0.14 | | | | | 1 | µg/L | | |
| 20P. PCB-1221 (11104-28-2) | X | | X | < 0.076 | | | | | 1 | µg/L | | |
| 21P. PCB-1232 (11141-16-5) | X | | X | < 0.11 | | | | | 1 | µg/L | | |
| 22P. PCB-1248 (12672-29-6) | X | | X | < 0.26 | | | | | 1 | µg/L | | |
| 23P. PCB-1260 (11096-82-5) | X | | X | < 0.10 | | | | | 1 | µg/L | | |
| 24P. PCB-1016 (12674-11-2) | X | | X | < 0.075 | | | | | 1 | µg/L | | |
| 25P. Toxaphene (8001-35-2) | X | | X | < 0.35 | | | | | 1 | µg/L | | |

SUPPLEMENTAL DATA

| | | | | | | | | | | | | | |
|--|--|---|---|----------|--|--|--|---|--|--|--|--|--|
| Free Cyanide (measured as Weak Acid Dissociable) | | | X | < 3.0 | | | | 1 | | | | | |
| Chromium, Hexavalent | | | X | < 0.013 | | | | 1 | | | | | |
| Vanadium, Total | | X | | < 20 | | | | 1 | | | | | |
| Carbazole | | | X | < 0.53 H | | | | 1 | | | | | |
| 1-Methylnaphthalene | | | X | < 0.25 H | | | | 1 | | | | | |
| 2-Methylnaphthalene | | | X | < 0.68 H | | | | 1 | | | | | |
| 1,4-Dioxane | | | X | < 1.1 | | | | 1 | | | | | |
| 2-Butanone | | | X | < 5.0 | | | | 1 | | | | | |
| Styrene | | | X | < 5.0 | | | | 1 | | | | | |
| Carbon Disulfide | | | X | < 5.0 | | | | 1 | | | | | |
| Methyl tert-Butyl Ether | | | X | < 5.0 | | | | 1 | | | | | |
| Xylenes | | | X | < 3.6 | | | | 1 | | | | | |

Notes:
"H" indicates the sample analysis was performed outside of the allowed hold time.

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.

EPA ID NUMBER (copy from Item 1 of Form 1)

110000307864

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

OUTFALL NO.

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

401 (current)

| 1. POLLUTANT (if available) | 2. EFFLUENT | | | | | | 3. UNITS (specify if blank) | | 4. INTAKES (optional) | |
|------------------------------------|--|----------|---|----------|---|----------|--|------------------|-----------------------|--|
| | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM AVG. VALUE (if available) | | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS | a. LONG TERM AVG. VALUE (1) CONCENTRATION |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | |
| a. Biochemical Oxygen Demand (BOD) | 33.0 * | 113 | 29.0 | 90.3 | 7.8 | 21.3 | 74 individual; 38 for monthly ave | mg/L | lb/day | |
| b. Chemical Oxygen Demand (COD) | Analysis not possible - high chloride in sample matrix is a positive interference. | | | | | | 0 | | | |
| c. Total Organic Carbon (TOC) | 123 | 296 | 114 | 205 | 17.3 | 44.8 | 75 individual; 38 for monthly ave | mg/L | lb/day | |
| d. Total Suspended Solids (TSS) | 156 | 482 | 99.9 | 295 | 14.2 | 38.9 | 72 individual; 38 for monthly ave | mg/L | lb/day | |
| e. Ammonia (as N) | 2.7 | 9.6 | 1.4 | 4.8 | 0.12 | 0.36 | 76 individual; 38 for monthly ave | mg/L | lb/day | |
| f. Flow | VALUE | | VALUE | | VALUE | | | | | VALUE |
| g. Temperature (winter) | 0.835 | | 0.502 | | 0.279 | | 1048 individual; 38 for monthly ave | | | MGD |
| h. Temperature (summer) | | | | | | | 0 | | | °F |
| i. pH | 7.3 | 9.0 | | | | | 0 | | | °F |
| | MINIMUM | MAXIMUM | MINIMUM | MAXIMUM | | | 1149 individual; 38 for monthly ave | STANDARD UNITS | | |

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly or indirectly but expressly, in an effluent limitation guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

| 1. POLLUTANT (if available) | 2. MARK 'X' | | 3. EFFLUENT | | | | 4. UNITS | | 5. INTAKE (optional) | |
|--------------------------------|---------------------|--------------------|------------------------|----------|---|----------|---|--------------------|----------------------|---------|
| | a. BELIEVED PRESENT | b. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM AVG. VALUE (if available) | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | |
| a. Bromide (24959-67-9) | X | | 2.4 | 7.6 | | | | 1 | mg/L | lb/d |
| b. Chlorine, Total Residual | | X | | | | | | 0 | | |
| c. Color | X | | 15 H | | | | | 1 | PCU | |
| d. Fecal Coliform | | X | < 1.0 H, T | | | | | 1 | col/100mL | |
| e. Fluoride (16984-48-8) | X | | 0.31 | 0.98 | | | | 1 | mg/L | lb/d |
| f. Nitrate-Nitrite (as N) | X | | 4.3 | 13.6 | | | | 1 | mg/L | lb/d |

Available Seawater (Intake) data for select parameters is in Table V-1.

Notes:

* For BOD, the maximum result from the dataset was < 47.0 mg/L due to a sample dilution factor of 30. The value of 33 mg/L is the next highest recorded value. The maximum listed mass is not associated with the < 47.0 mg/L result.
 "H" indicates the sample analysis was performed outside of the allowed hold time.
 "T" indicates the sample was received outside the required temperature range.

| 1. POLLUTANT AND CAS NO. (if available) | 2. MARK 'X' | | 3. EFFLUENT | | | | | | 4. UNITS | | 5. INTAKE (optional) | | | b. NO. OF ANALYSES |
|---|------------------------|-----------------------|------------------------|-----------|---|----------|--|----------|---------------------------------|------------------|----------------------|-------------------------|----------|-----------------------|
| | a. BELIEVED PRESENT | b. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM AVRG VALUES (if available) | | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS | a. LONG TERM AVG. VALUE | | |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| g. Nitrogen, Total Organic (as N) | X | | 0.65 J | 2.1 J | | | | | 1 | mg/L | lb/d | | | |
| h. Oil and Grease | X | | 15.2 | 40.2 | 8.2 | 21 | 1.60 | 4.1 | 75 individual 38 for monthly | mg/L | lb/d | | | |
| i. Phosphorus (as P), Total (7723-14-0) | X | | 0.041 | 0.13 | | | | | 1 | mg/L | lb/d | | | |
| j. Radioactivity | | | | | | | | | | | | | | |
| (1) Alpha, Total | | X | | | | | | | | | | | | |
| (2) Beta, Total | | X | | | | | | | | | | | | |
| (3) Radium, Total | | X | | | | | | | | | | | | |
| (4) Radium 226, Total | | X | | | | | | | | | | | | |
| k. Sulfate (as SO4) (14808-79-8) | X | | 147 | 466 | | | | | 1 | mg/L | lb/d | | | |
| l. Sulfide (as S) | X | | 0.80 | 2.17 | 0.60 | 1.50 | 0.19 | 0.53 | 75 individual 38 for monthly | mg/L | lb/d | | | |
| m. Sulfite (as SO3) (14265-45-3) | | X | | | | | | | 0 | | | | | |
| n. Surfactants | X | | 0.16 J, H | 0.51 J, H | | | | | 1 | mg/L | lb/d | | | |
| o. Aluminum, Total (7429-90-5) | X | | 0.103 | 0.33 | | | | | 1 | mg/L | lb/d | | | |
| p. Barium, Total (7440-39-3) | X | | 0.243 | 0.58 | | | 0.166 | 0.43 | 2 | mg/L | lb/d | | | |
| q. Boron, Total (7440-48-4) | X | | 0.487 | 1.54 | | | | | 1 | mg/L | lb/d | | | |
| r. Cobalt, Total (7440-48-4) | X | | 0.54 J | 0.0017 J | | | | | 1 | mg/L | lb/d | | | |
| s. Iron, Total (7439-89-6) | X | | 0.044 | 0.14 | | | | | 1 | mg/L | lb/d | | | |
| t. Magnesium, Total (7439-95-4) | X | | 45.7 | 145 | | | | | 1 | mg/L | lb/d | | | |
| u. Molybdenum, Total (7439-98-7) | X | | 0.0043 | 0.014 | | | | | 1 | mg/L | lb/d | | | |
| v. Manganese, Total (7439-96-5) | X | | 0.192 | 0.61 | | | | | 1 | mg/L | lb/d | | | |
| w. Tin, Total (7440-31-5) | | X | < 0.040 | | | | | | 1 | mg/L | | | | |
| x. Titanium, Total (7440-32-6) | | X | < 0.038 | | | | | | 1 | mg/L | | | | |

Available Seawater (Intake)
data for select parameters
is in Table V-1.

Available Seawater (Intake)
data for select parameters
is in Table V-1.

Notes:
"J" indicates an estimated value between the method detection limit and reporting limit.
"H" indicates the sample analysis was performed outside of the allowed hold time.

CONTINUED FROM PAGE 3 OF FORM 2-C

| PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark in column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete on table 6 (1 of 7 pages) for each outfall. See instructions for additional details and requirements. | | | | | | | | | | | | | | |
|--|---------------------|---------------------|--------------------|--|----------|--|----------|---|----------|--------------------------------------|------------------|--------------------|---------|--|
| 1. POLLUTANT AND CAS NUMBERS (if available) | 2. MARK "X" | | | 3. EFFLUENT | | | | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES | | |
| | a. TESTING REQUIRED | b. BELIEVED PRESENT | c. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE (1) CONCENTRATION | (2) MASS | b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION | (2) MASS | c. LONG TERM VALUE (if available) (1) CONCENTRATION | (2) MASS | d. NO. OF ANALYSES | a. CONCENTRATION | | b. MASS | a. LONG TERM AVERAGE VALUE (1) CONCENTRATION |
| METALS, CYANIDE, AND TOTAL PHENOLS | | | | | | | | | | | | | | |
| 1M. Antimony, Total (7440-36-0) | X | X | | 43.4 | 0.104 | | | 33.9 | 0.091 | 2 | µg/L | lb/d | | |
| 2M. Arsenic, Total (7440-38-2) | X | X | | 9.0 | 0.022 | | | 5.2 | 0.013 | 2 | µg/L | lb/d | | |
| 3M. Beryllium, Total (7440-41-7) | X | | X | < 0.070 | | | | | | 1 | µg/L | | | |
| 4M. Cadmium, Total (7440-43-9) | X | | X | < 0.050 | | | | | | 1 | µg/L | | | |
| 5M. Chromium, Total (7440-47-3) | X | X | | 7.7 * | 0.027 * | 9.4 | 0.0283 | 2.7 | 0.0076 | 75 individual 38 for monthly average | µg/L | | | |
| 6M. Copper, Total (7440-50-8) | X | X | | < 0.93 | | | | | | 1 | µg/L | | | |
| 7M. Lead, Total (7439-92-1) | X | | X | < 0.50 | | | | | | 1 | µg/L | | | |
| 8M. Mercury, Total (7439-97-6) | X | X | | 0.17 | 0.00040 | | | 0.13 | 0.00036 | 2 | µg/L | lb/d | | |
| 9M. Nickel, Total (7440-02-0) | X | X | | 21.4 | 0.051 | | | 18.2 | 0.049 | 2 | µg/L | lb/d | | |
| 10M. Selenium, Total (7782-49-2) | X | X | | 1.7 | 0.0054 | | | | | 1 | µg/L | lb/d | | |
| 11M. Silver, Total (7440-22-4) | X | | X | < 0.050 | | | | | | 1 | µg/L | | | |
| 12M. Thallium, Total (7440-28-0) | X | | X | < 0.50 | | | | | | 1 | µg/L | | | |
| 13M. Zinc, Total (7440-66-6) | X | X | | 34.7 | 0.083 | | | 21.8 | 0.055 | 2 | µg/L | lb/d | | |
| 14M. Cyanide, Total (57-12-5) | X | | X | < 5.0 | | | | | | 1 | µg/L | | | |
| 15M. Phenols, Total | X | X | | 0.120 | 0.43 | 0.066 | 0.24 | 0.012 | 0.035 | 74 individual 38 for monthly average | mg/L | lb/d | | |
| DIOXIN | | | | | | | | | | | | | | |
| 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6) | | | X | DESCRIBE RESULTS | | | | | | | | | | |
| Available Seawater (Intake) data for select parameters is in Table V-I. | | | | | | | | | | | | | | |

* The maximum chromium result was a non-detect value (< 17 µg/L) with an elevated detection limit due to sample dilution. The values of 7.7 µg/L and 0.027 lb/d are for the maximum detected result. The majority of results are non-detect at < 2.5 or < 1.7 µg/L.

| 1. POLLUTANT AND CAS NUMBERS (if available) | 2. MARK "X" | | c. BE- LIEVED ABSENT | 3. EFFLUENT | | | | d. NO. OF ANALYSES | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES | | |
|--|-------------------------------|-----------------------------|----------------------------|---|----------|---|----------|--------------------|--------------------------------------|----------|----------------------|---------|--------------------|----------------------------|----------|
| | TEST- ING RE- QUIRED | b. BE- LIEVED PRESENT | | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | | c. LONG TERM VALUE (if available) | | a. CONCENTRATION | b. MASS | | a. LONG TERM AVERAGE VALUE | |
| | | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS |
| GC/MS FRACTION - VOLATILE COMPOUNDS | | | | | | | | | | | | | | | |
| 1V. Acrolein (107-02-8) | | | X | | | | | | | | | | | | |
| 2V. Acrylonitrile (107-13-1) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 3V. Benzene (71-43-2) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 4V. Bis (Chloromethyl) Ether (542-88-1) | | | X | Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutants List. | | | | | | | | | | | |
| 5V. Bromoform (75-25-2) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 6V. Carbon Tetrachloride (56-23-5) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 7V. Chlorobenzene (108-90-7) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 8V. Chlorodibromomethane (124-48-1) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 9V. Chloroethane (75-00-3) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 10V. 2-Chloroethylvinyl Ether (110-75-8) | | | X | | | | | | | | | | | | |
| 11V. Chloroform (67-66-3) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 12V. Dichlorobromomethane (75-27-4) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 13V. Dichlorodifluoromethane (75-71-8) | | | X | Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutants List. | | | | | | | | | | | |
| 14V. 1,1-Dichloroethane (75-34-3) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 15V. 1,2-Dichloroethane (107-06-2) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 16V. 1,1-Dichloroethylene (75-35-4) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 17V. 1,2-Dichloropropane (78-87-5) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 18V. 1,3-Dichloropropylene (542-75-6) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 19V. Ethylbenzene (100-41-4) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 20V. Methyl Bromide (74-83-9) | | | X | < 5.0 | | | | | | | µg/L | | | | |
| 21V. Methyl Chloride (74-87-3) | | | X | < 5.0 | | | | | | | µg/L | | | | |

CONT NUED FROM PAGE V-4

1. POLLUTANT

AND CAS NUMBERS (if available)

2. MARK "X"

TESTING REQUIRED

b. BE-LEVEL PRESENT

c. BE-LEVEL ABSENT

EPA ID NUMBER (copy from Item 1 of Form 1)

3. EFFLUENT

a. MAXIMUM DAILY VALUE (1) CONCENTRATION

b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION

(2) MASS

OUTFALL NUMBER

401 (current)

| | | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES | |
|---|--|------------------|---------|--|----------|--------------------|--|
| | | a. CONCENTRATION | b. MASS | a. LONG TERM AVERAGE VALUE (1) CONCENTRATION | (2) MASS | | |
| GC/MS FRACTION - VOLATILE COMPOUNDS-CONTINUED | | | | | | | |
| 22V. Methylene Chloride (75-09-2) | | X | | | | 1 | |
| 23V. 1,1,2,2-Tetrachloroethane (79-34-5) | | X | | | | 1 | |
| 24V. Tetrachloroethylene (127-18-4) | | X | | | | 1 | |
| 25V. Toluene (108-88-3) | | X | | | | 1 | |
| 26V. 1,2-Dichloroethylene (156-60-5) | | X | | | | 1 | |
| 27V. 1,1,1-Trichloroethane (71-55-6) | | X | | | | 1 | |
| 28V. 1,1,2-Trichloroethane (79-00-5) | | X | | | | 1 | |
| 29V. Trichloroethylene (79-01-6) | | X | | | | 1 | |
| 30V. Trichlorofluoromethane (75-69-4) | | X | | | | 1 | |
| 31V. Vinyl Chloride (75-01-4) | | X | | | | 1 | |
| GC/MS FRACTION - A.C.D. COMPOUNDS | | | | | | | |
| 1A. 2-Chlorophenol (95-57-8) | | X | | | | 1 | |
| 2A. 2,4-Dichlorophenol (120-83-2) | | X | | | | 1 | |
| 3A. 2,4-Dimethylphenol (105-67-9) | | X | | | | 1 | |
| 4A. 4,6-Dinitro-O-Cresol (534-52-1) | | X | | | | 1 | |
| 5A. 2,4-Dinitrophenol (51-28-5) | | X | | | | 1 | |
| 6A. 2-Nitrophenol (88-75-5) | | X | | | | 1 | |
| 7A. 4-Nitrophenol (100-02-7) | | X | | | | 1 | |
| 8A. P-Chloro-M-Cresol (59-50-7) | | X | | | | 1 | |
| 9A. Pentachlorophenol (87086-5) | | X | | | | 1 | |
| 10A. Phenol (108-95-2) | | X | | | | 1 | |
| 11A. 2,4,6-Trichlorophenol (88-06-2) | | X | | | | 1 | |

Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutants List.

NEICVP1416E01

EPA Form 3510-2C (8-90)

Page 54 of 88

Appendix B

Limetree Bay Refining and Terminals

Christiansted, US Virgin Islands

NEICVP1416E01

Appendix B

| 1. POLLUTANT AND CAS NUMBERS (if available) | | 2. MARK "X" | | 3. EFFLUENT | | | | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES |
|---|--|--|------------------------|-------------|---|-------------|--------------------------------------|-------------|--------------------|----------------------|---------|--------------------|
| TEST- ING RE- QU RED | b. BE- L E V E D P R E S E N T | c. BE- L I E V E D A B S E N T | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM VALUE (if available) | | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS | |
| | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | |
| GC/MS FRACTION -BASE/NEUTRAL COMPOUNDS | | | | | | | | | | | | |
| 1B. Acenaphthene (83-32-9) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 2B. Acenaphthylene (206-96-8) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 3B. Anthracene (120-12-7) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 4B. Benzidine (92-87-5) | | | X | | | | | | | 0 | | |
| 5B. Benzo (a) Anthracene (56-55-3) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 6B. Benzo (a) Pyrene (50-32-08) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 7B. 3,4-Benzo- fluoranthene (205-99-2) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 8B. Benzo (ghi) Perylene (191-24-2) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 9B. Benzo (k) Fluoranthene (207-08-9) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 10B. Bis (2-Chloro- ethoxy) Methane (111-91- 1) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 11B. Bis (2-Chloro-ethyl) Ether (111-44-4) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 12B. Bis (2-Chloroisopropyl) Ether (102-60-1) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 13B. Bis (2-Ethyl- hexyl) Phthalate (117-81-7) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 14B. 4-Bromo-phenyl Phenyl Ether (101-55-3) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 15B. Butyl Benzyl Phthalate (85-68-7) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 16B. 2-Chloro- naphthalene (91-58-7) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 17B. 4-Chlorophenyl Phenyl Ether (7005-72-3) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 18B. Chrysene (218-01-9) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 19B. Dibenzo (a, h) Anthracene (53-70-3) | | | X | < 5.21 | | | | | | 1 | µg/L | |
| 20B. 1,2-Dichloro- benzene (95-50-1) | | | X | < 5.0 | | | | | | 1 | µg/L | |
| 21B. 1,3-Dichloro- benzene (541-73-1) | | | X | < 5.0 | | | | | | 1 | µg/L | |

| CONTINUED FROM PAGE V-6 | | | | | | | | | | EPA ID NUMBER (copy from Item 1 of Form 1) | | OUTFALL NUMBER | | | | | | | | | |
|--|--------------------------|-----------------------------|----------------------------|------------------------|----------|-------------------------|----------|--------------------|------------------------|--|-----------------------|----------------|--------------|------------------------|--------------------|----------|--|----------------------|--|--|--|
| 1. POLLUTANT | | | | | | | | | | 110000307864 | | 401 (current) | | | | | | | | | |
| 2. MARK "X" | | | | | | | | | | 3. EFFLUENT | | | | 4. UNITS | | | | 5. INTAKE (optional) | | | |
| AND CAS NUMBERS (if available) | TESTING RE- QU RED | b. BE- LIEVED PRESENT | c. BE- LIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE | | c. LONG TERM VALUE | | d. NO. OF ANALYSES | a. CONCEN- TRATION | b. MASS | a. LONG TERM | | b. NO. OF ANALYSES | | | | | | |
| | | | | (1) CONCEN- TRATION | (2) MASS | (1) CONCEN- TRATION | (2) MASS | (if available) | (1) CONCEN- TRATION | | | | (2) MASS | (1) CONCEN- TRATION | | (2) MASS | | | | | |
| GC/MS FRACTION-BASE/NEUTRAL COMPOUNDS (continued) | | | | | | | | | | | | | | | | | | | | | |
| 22B. 1,4-Dichlorobenzene (106-46-7) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 23B. 3,3'-Dichlorobenzidine (91-94-1) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 24B. Diethyl Phthalate (84-66-2) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 25B. Dimethyl Phthalate (131-11-3) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 26B. Di-N-Butyl Phthalate (84-74-2) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 27B. 2,4-Dinitrotoluene (121-14-2) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 28B. 2,6-Dinitrotoluene (606-20-20) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 29B. Di-N-Octyl Phthalate (117-84-0) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 30B. 1,2-Diphenylhydrazine (as Azo-benzene) (122-66-7) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 31B. Fluoranthene (206-44-0) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 32B. Fluorene (86-73-7) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 33B. Hexachlorobenzene (118-74-1) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 34B. Hexachlorobutadiene (87-68-3) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 35B. Hexachloro- cyclopentadiene (77-47-4) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 36B. Hexachloroethane (67-72-2) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 37B. Indeno (1,2,3-cd) Pyrene (193-39-5) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 38B. Isophorone (78-59-1) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 39B. Naphthalene (91-20-3) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 40B. Nitrobenzene (98-95-3) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 41B. N- Nitrosodimethylamine (62-75-9) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |
| 42B. N-Nitrosod-N- Propylamine (621-41-7) | | | X | | | | | | | 1 | µg/L | | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBERS (if available) | 2. MARK "X" | | | 3. EFFLUENT | | | | | | 4. UNITS | | 5. INTAKE (optional) | | | b. NO. OF ANALYSES |
|---|-----------------------|-----------------------|----------------------|------------------------|----------|--|----------|---|----------|--------------------|------------------|----------------------|----------------------------|----------|--------------------|
| | a. TEST-ING RE-QUIRED | b. BE- LIEVED PRESENT | c. BE- LIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM AVRG. VALUE (if available) | | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS | a. LONG TERM AVERAGE VALUE | | |
| | | | | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS | |
| GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued) | | | | | | | | | | | | | | | |
| 43B. N-Nitro-sodiphenylamine (86-30-6) | | | X | < 5.21 | | | | | | | | µg/L | | | 1 |
| 44B. Phenanthrene (85-01-8) | | | X | < 5.21 | | | | | | | | µg/L | | | 1 |
| 45B. Pyrene (129-00-0) | | | X | < 5.21 | | | | | | | | µg/L | | | 1 |
| 46B. 1,2,4-Tri-chlorobenzene (120-82-1) | | | X | < 5.21 | | | | | | | | µg/L | | | 1 |
| GC/MS FRACTION - PESTICIDES | | | | | | | | | | | | | | | |
| 1P. Aldrin (309-00-2) | | | X | | | | | | | | | | | | |
| 2P. α-BHC (319-84-6) | | | X | | | | | | | | | | | | |
| 3P. β-BHC (319-85-7) | | | X | | | | | | | | | | | | |
| 4P. γ-BHC (58-89-9) | | | X | | | | | | | | | | | | |
| 5P. δ-BHC (319-86-6) | | | X | | | | | | | | | | | | |
| 6P. Chlordane (57-74-9) | | | X | | | | | | | | | | | | |
| 7P. 4,4'-DDT (50-29-3) | | | X | | | | | | | | | | | | |
| 8P. 4,4'-DDE (72-55-9) | | | X | | | | | | | | | | | | |
| 9P. 4,4'-DDD (72-54-8) | | | X | | | | | | | | | | | | |
| 10P. Dieldrin (60-57-1) | | | X | | | | | | | | | | | | |
| 11P. α-Endosulfan (115-29-7) | | | X | | | | | | | | | | | | |
| 12P. β-Endosulfan (115-29-7) | | | X | | | | | | | | | | | | |
| 13P. Endosulfan Sulfate (1031-07-8) | | | X | | | | | | | | | | | | |
| 14P. Endrin (72-20-8) | | | X | | | | | | | | | | | | |
| 15P. Endrin Aldehyde (7421-93-4) | | | X | | | | | | | | | | | | |
| 16P. Heptachlor (76-44-8) | | | X | | | | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBERS (if available) | 2. MARK "X" | | | 3. EFFLUENT | | | | | | 4. UNITS | | 5. INTAKE (optional) | | b. NO. OF ANALYSES | |
|--|----------------------------|--------------------------|-------------------------|------------------------|----------|---|----------|--------------------------------------|----------|--------------------|-----------------------|----------------------|------------------------|--------------------|----------|
| | TEST- ING RE- QUIRED | b. BE- LIEVED PRESENT | c. BE- LIEVED ABSENT | a. MAXIMUM DAILY VALUE | | b. MAXIMUM 30 DAY VALUE (if available) | | c. LONG TERM VALUE (if available) | | d. NO. OF ANALYSES | a. CONCEN- TRATION | b. MASS | a. LONG TERM | | |
| | | | | (1) CONCEN- TRATION | (2) MASS | (1) CONCEN- TRATION | (2) MASS | (1) CONCEN- TRATION | (2) MASS | | | | (1) CONCEN- TRATION | | (2) MASS |
| | | | | | | | | | | | | | | | |
| GC/MS FRACTION PESTICIDES (continued) | | | | | | | | | | | | | | | |
| 17P. Heptachlor Epoxide (1024-57-3) | | | X | | | | | | | | | | | | |
| 18P. PCB-1242 (53469-21-9) | | | X | | | | | | | | | | | | |
| 19P. PCB-1254 (11097-69-1) | | | X | | | | | | | | | | | | |
| 20P. PCB-1221 (11104-28-2) | | | X | | | | | | | | | | | | |
| 21P. PCB-1232 (11141-16-5) | | | X | | | | | | | | | | | | |
| 22P. PCB-1248 (12672-29-6) | | | X | | | | | | | | | | | | |
| 23P. PCB-1260 (11096-82-5) | | | X | | | | | | | | | | | | |
| 24P. PCB-1016 (12674-11-2) | | | X | | | | | | | | | | | | |
| 25P. Toxaphene (8001-35-2) | | | X | | | | | | | | | | | | |

| SUPPLEMENTAL DATA | | | | | | | | | | | | | | |
|-------------------------|--|---|---|-------|------|--|--|--|--|--|---|------|------|--|
| Vanadium, Total | | X | | 68.5 | 0.16 | | | | | | 1 | µg/L | lb/d | |
| 1,4-Dioxane | | | X | < 1.0 | | | | | | | 1 | µg/L | | |
| 2-Butanone | | | X | < 5.0 | | | | | | | 1 | µg/L | | |
| Styrene | | | X | < 5.0 | | | | | | | 1 | µg/L | | |
| Carbon Disulfide | | | X | < 5.0 | | | | | | | 1 | µg/L | | |
| Methyl tert-Butyl Ether | | | X | < 5.0 | | | | | | | 1 | µg/L | | |
| Xylenes | | | X | < 5.0 | | | | | | | 1 | µg/L | | |

TABLE V-PEQ. PROJECTED EFFLUENT QUALITY FOR ELG PARAMETERS DURING PHASE A OPERATIONS

| Parameter | Outfall 401 Projected Effluent Quality Under Phase A Operations (based on estimated maximum monthly average flow of 2.159 MGD and Preliminary TBEL mass allowance) | | Outfall 001 Projected Effluent Quality Under Phase A Operations (based on estimated maximum monthly average flow of 21.959 MGD and combined mass (current Outfall 001 + Preliminary 401 TBEL mass allowance)) | |
|---------------------|---|--------------------|---|--------------------|
| | Daily Max (mg/L) | Monthly Avg (mg/L) | Daily Max (mg/L) | Monthly Avg (mg/L) |
| BOD5 | 276 | 153 | 35.7 (A) | 23.6 (A) |
| TSS | 192 | 122.4 | 23.0 | 16.1 |
| TOC | 607 | 336.5 | 63.5 | 37.0 |
| O&G | 83 | 44.6 | < 10.2 | < 6.4 |
| Phenolic Compounds | 2.1 | 1.00 | < 0.205 (B) | < 0.101 (B) |
| Ammonia as N | 190 | 86.2 | 18.7 | 8.6 |
| Sulfide | 1.8 | 0.81 | 0.39 | 0.29 |
| Total Chromium | 4.2 | 2.4 | 0.41 | 0.24 |
| Hexavalent Chromium | 0.33 | 0.16 | < 0.041 | < 0.023 |

Notes:

(A) Utilized current Outfall 001 TOC result*2.2 for estimated current Outfall 001 BOD result (used to calculate the combined mass). This ratio of TOC to BOD is based on 40 CFR 419.13 (d). Measured current Outfall 001 BOD was non-detect (<100 mg/L). All the BOD dilutions failed to deplete the method-required 2 mg O2/L. Only a "less than" result could be calculated from the least dilute preparation.

(B) No current Outfall 001 Phenolics data available for use in calculating the combined mass. Current Outfall 001 mass assumed to be equal to current Outfall 401 mass.

TABLE RPE-1. COMPARISON OF CURRENT OUTFALL 001 DATA TO WATER QUALITY CRITERIA (WQC)

Only presented for organics with detections and other parameters with applicable criteria or petroleum refining ELGs.
For w/mixing zone estimates, background concentrations utilized in calculations for noted cells (note D), otherwise assumed to be zero.

| Parameter | Units | Current 001 Daily Max Result | Current 001 with 12.5:1 Mixing Zone (C) | Most Stringent WQQ or Current Permit Limits | WQC Basis |
|---------------------------------|-------|------------------------------|---|---|---|
| CONVENTIONALS | | | | | |
| pH | s.u. | range: 6.8 - 8.5 | na | 6.7 - 8.5 | Permit Limit |
| Temperature | °F | range: 78.0 - 99.1 | na | 101.9; 99.5 | Permit Limit (Daily Maximum; Monthly Average) |
| Ammonia as N | mg/L | 0.15 | 0.012 | 0.17 | CCC (assumes salinity 30 g/kg; pH 8.4, temp 35°C) |
| Biochemical Oxygen Demand | mg/L | 14.3 (A) | 1.1 (A) | --- | --- |
| Chlorine, Total Residual | mg/L | believed not present | believed not present | 0.0075 | --- |
| Dissolved Oxygen | mg/L | range: 5.84 - 11.67 | na | min 5.0 mg/L | Permit Limit |
| Oil and Grease (hexane) | mg/L | < 3.4 | < 0.27 | --- | --- |
| Phenols, Total ("Phenolics") | mg/L | 0.0039 (B) | 0.00031 (B) | --- | --- |
| Phosphorus (as P), Total | mg/L | 0.030 | 0.30 (D) | 0.050 | Class B & C marine/coastal waters: not to exceed value |
| Sulfide (as S) | mg/L | 0.64 | 0.051 | 0.002 | CCC |
| Total Organic Carbon | mg/L | 6.5 | 0.52 | --- | --- |
| Total Suspended Solids | mg/L | 6.8 | 0.54 | --- | --- |
| Total Nitrogen ^(E) | | 1.37 | 0.36 (D) | 0.27 | Class B & C waters: Total Nitrogen not to exceed value (> 10% of samples over a 3yr period) |
| CYANIDE AND METALS | | | | | |
| Cyanide, Free (measured as WAD) | ug/L | < 3.0 | < 0.24 | 1.0 | CMC = CCC |
| Antimony, Total | ug/L | 5.7 | 0.46 | 640 | OO |
| Arsenic, Total | ug/L | 14.6 | 5.8 (D) | 0.14 | OO |
| Cadmium, Total | ug/L | < 0.050 | < 2.2 (D) | 7.9 | CCC |
| Chromium, Hexavalent | ug/L | < 0.013 | < 0.0010 | 50 | CCC |
| Chromium, Total | ug/L | 0.56 J | 9.2 (D) | --- | --- |
| Copper, Total | ug/L | 2.7 | 7.2 (D) | 3.7 | CCC |
| Lead, Total | ug/L | < 0.50 | < 0.040 | 8.5 | CCC |
| Manganese, Total | ug/L | 10 | 0.80 | 100 | OO |
| Mercury, Total | ug/L | < 0.10 | < 0.050 (D) | 1.1 | CCC |
| Nickel, Total | ug/L | 5.6 | 3.7 (D) | 8.3 | CCC |
| Selenium, Total | ug/L | 3.9 | 6.5 (D) | 71.1 | CCC |
| Silver, Total | ug/L | < 0.05 | < 0.0040 | 2.24 | CMC |
| Thallium, Total | ug/L | < 0.50 | < 0.040 | 0.47 | OO |
| Zinc, Total | ug/L | 7.0 | 19.0 (D) | 85.6 | CCC |

TABLE RPE-1. COMPARISON OF CURRENT OUTFALL 001 DATA TO WATER QUALITY CRITERIA (WQC)

Only presented for organics with detections and other parameters with applicable criteria or petroleum refining ELGs. For w/mixing zone estimates, background concentrations utilized in calculations for noted cells (note D), otherwise assumed to be zero.

| Parameter | Units | Current 001 Daily Max Result | Current 001 with 12.5:1 Mixing Zone (C) | Most Stringent WQC or Current Permit Limits | WQC Basis |
|---------------------------------|-------|------------------------------|---|---|-----------|
| ORGANICS WITH DETECTIONS | | | | | |
| Benzene | ug/L | 0.56 J | 0.045 J | 16 - 58 | OO |
| Bis (2-Ethylhexyl) Phthalate | ug/L | 110 (F) | 9 (F) | 0.37 | OO |
| Butyl Benzyl Phthalate | ug/L | 1.1 J, (F) | 0.088 J, (F) | 0.1 | OO |
| Di-N-Butyl Phthalate | ug/L | 1.4 J, (F) | 0.11 J, (F) | 30 | OO |

Notes:

(A) Utilized current Outfall 001 TOC result*2.2 for estimated current Outfall 001 BOD result. This ratio of TOC to BOD is based on 40 CFR 419.13 (d). Measured current Outfall 001 BOD was non-detect (<100 mg/L). All the BOD dilutions failed to deplete the method-required 2 mg O₂/L. Only a "less than" result could be calculated from the least dilute preparation.

(B) No current Outfall 001 Phenolics data available. Current Outfall 001 concentration based on current Outfall 401 daily max mass loading.

(C) Unless noted, mixing does not take into account background seawater concentrations.

(D) The following available data were used as background in mixing zone calculations.

Phosphorus: average of 2018-2019 intake results (0.027 and 0.611 mg/L).

Total nitrogen: average of 2018-2019 intake results (0.36 J and 0.18 J mg/L).

Arsenic: average of 2019 intake (1.8 J ug/L) and 3/2000 STC-20 (8.3 ug/L) results.

Cadmium: average of 2018 intake (< 0.33 ug/L) and 3/2000 STC-20 (4.5 ug/L) results.

Chromium: 3/2000 STC-20 (10 ug/L) result.

Copper: average of 2018 intake (< 5.2 ug/L) and 3/2000 STC-20 (9.9 ug/L) results.

Mercury: 3/2000 STC-20 (0.046 ug/L) result.

Nickel: average of 2018 intake (< 2.1 ug/L) and 3/2000 STC-20 (5 ug/L) results.

Selenium: 3/2000 STC-20 (6.7 ug/L) result.

Zinc: 3/2000 STC-20 (20 ug/L) result.

(E) Total Nitrogen from sum of TKN and Nitrate-Nitrite results.

(F) Bis (2-Ethylhexyl) Phthalate, Butyl Benzyl Phthalate, and Di-N-Butyl Phthalate detections are believed to be due to incidental contamination from sampling tubing. Values shown are from one sample event, but for the other sample event these compounds were non-detect at < 5.32 ug/L.

J = estimated result between the method detection limit and reporting limit

OO = Organism Only Human Health Criteria

CCC = Chronic Aquatic Life Saltwater Criteria. Where applicable, metal conversion factors have been applied and values shown are for total metals.

CMC = Acute Aquatic Life Saltwater Criteria. Where applicable, metal conversion factors have been applied and values shown are for total metals.

TABLE RPE-2. COMPARISON OF PHASE A OUTFALL 001 DATA TO WATER QUALITY CRITERIA (WQC)

Only presented for parameters with petroleum refining ELGs.

For w/mixing zone estimates, background concentrations utilized in calculations for noted cells (note A), otherwise assumed to be zero.

| Parameter | Units | Projected Phase A Outfall 001 Daily Max | Projected Phase A Outfall 001 with 12.5:1 Mixing Zone (*) | Most Stringent WQ Criteria or Current Permit Limits | WQ Criteria Basis |
|------------------------------|-------|---|---|---|--|
| Ammonia as N | mg/L | 18.7 | 1.5 | 0.17 | CCC (assumes salinity 30 g/kg; pH 8.4, temp 35°C) |
| Biochemical Oxygen Demand | mg/L | 35.7 | 2.9 | --- | |
| Oil and Grease (hexane) | mg/L | < 10.2 | < 0.82 | --- | |
| Phenols, Total ("Phenolics") | mg/L | 0.205 | 0.016 | --- | |
| Sulfide (as S) | mg/L | 0.39 | 0.031 | 0.002 | CCC |
| Total Organic Carbon | mg/L | 63.5 | 5.1 | --- | |
| Total Suspended Solids | mg/L | 23.0 | 1.8 | --- | |
| Chromium, Hexavalent | ug/L | < 41 | < 3.3 | 50 | CCC |
| Chromium, Total | ug/L | 410 | 42.0 (A) | --- | |

Notes:

(*) Unless noted, mixing does not take into account background seawater concentrations.

(A) The following available data were used as background in mixing zone calculations for chromium: 3/2000 STC-20 (10 ug/L) result.

CCC = Chronic Aquatic Life Saltwater Criteria. Where applicable, metal conversion factors have been applied and values shown are for total metals.

Table V-I. Available Seawater (Intake) Data

| Parameter | STC-20 ^(A) 03/13/00 | Seawater Intake 11/15/18 | Seawater Intake 03/18/19 | Units |
|--|-----------------------------------|-----------------------------|-----------------------------|-------|
| Total Suspended Solids | 9 ^(B) | 8 | | mg/L |
| Ammonia (as N) | | < 0.035 | | mg/L |
| Nitrate + Nitrite | | 0.026 J | 0.041 J | mg/L |
| Total Kjeldahl Nitrogen (TKN) | | 0.33 J | < 0.140 | mg/L |
| Nitrogen, Total Organic (as N) | | 0.31 J | < 0.250 | mg/L |
| Total Nitrogen (Nitrate-Nitrite + TKN) | | 0.36 J | 0.18 J | mg/L |
| Phosphorus (as P), Total | 0.51 ^(B) | 0.027 | 0.611 | mg/L |
| TDS | | 29,800 | | mg/L |
| Salinity | | 27.4 | | PPT |
| Arsenic, Total | 8.3 | | 1.80 J | ug/L |
| Cadmium, Total | 4.5 | < 0.33 | | ug/L |
| Chromium, Total | 10 | | | ug/L |
| Copper, Total | 9.9 | < 5.2 | | ug/L |
| Iron, Total | 20 | | | ug/L |
| Lead, Total | | < 4.6 | | ug/L |
| Mercury, Total | 0.046 | | | ug/L |
| Nickel, Total | 5 | < 2.1 | | ug/L |
| Selenium, Total | 6.7 | | | ug/L |
| Zinc, Total | 20 | | | ug/L |

Notes

(A) Unless noted, data from water sample collected on March 13, 2000 by EPA at Station STC-20 located in upper part of Krause Lagoon Channel.

(B) Data from either Station STC-19 or STC-20, both of which are located in Krause Lagoon Channel. Date unknown.

J = estimated result between the method detection limit and reporting limit

USEPA FORM 2F AND ASSOCIATED ATTACHMENTS

Form 2F pages 1-3

Table F-I.A. Description of Stormwater Outfalls

Figure 5. Site Drainage Map

Table F-IV.B. Stormwater Contact with Materials

Table F-IV.C. Stormwater Controls

Table F-VI. Spill Information

Section VII for 004

Section VII for 006

Section VII for 007

Section VII for 008

Section VII for 009

Section VII for 011

[illegible]

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

| Outfall Number | Area of Impervious Surface (provide units) | Total Area Drained (provide units) | Outfall Number | Area of Impervious Surface (provide units) | Total Area Drained (provide units) |
|----------------|---|---------------------------------------|----------------|---|---------------------------------------|
| 004 | -- | 1,099,000 sq ft | 011 | -- | 256,608 sq ft |
| 006 | -- | 1,200,000 sq ft | | | |
| 007 | -- | 1,752,000 sq ft | | | |
| 008 | -- | 1,536,000 sq ft | | | |
| 009 | -- | 1,190,000 sq ft | | | |

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed in the last three years, to minimize contact by these materials with storm water runoff; materials loading and access areas; and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.


See Table F-IV.B

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

| Outfall Number | Treatment | List Codes from Table 2F-1 |
|--|------------------|----------------------------|
| 004 006 007 008 009 011 | See Table F-IV.C | 1-F, 1-V, 1-X, 4-B |

V. Nonstormwater Discharges

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharges from these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.

| Name and Official Title (type or print) | Signature | Date Signed |
|---|--|-------------|
| BRIAN K. LEVER PRESIDENT |  | 06/11/19 |

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

Visual observation during periods of dry weather indicate no unauthorized nonstormwater discharges (hydrostatic test waters are authorized if certain conditions are met) present in these outfalls with the exception of Outfall 006.

For Outfall 006, stormwater and sewage from off-site locations are known to be included.

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutant at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

See Table F-VI for a list of reportable spills within the 3 last years (May 2016 - April 2019).

VID980536080

Continued from Page 2

VII. Discharge Information

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided. Tables VII-A, VII-B, and VII-C are included on separate sheets numbered VII-1 and VII-2.

E. Potential discharges not covered by analysis - is any pollutant listed in Table 2F-2, 2F-3, 2F-4 a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☒ Yes (list all such pollutants below)

☐ No (go to Section IX)

| | | |
|-------------------|------------------------|------------------------|
| Oil and Grease | Anthracene | Vanadium |
| Sulfate | Benzo(a)anthracene | Strontium |
| Cobalt, total | Benzo(a)pyrene | Xylene (mixed isomers) |
| Molybdenum, total | Benzo(b)fluoranthene | Cyclohexane |
| Arsenic, total | Benzo(ghi)perylene | Napthenic acid |
| Lead, total | Benzo(j)fluoranthene | Monoethanolamine |
| Nickel, total | Chrysene | Diethanolamine |
| Selenium, total | Dibenzo(a,h)anthracene | Napthenic acid |
| Zinc, total | Fluoranthene | Monoethanolamine |
| Phenols | Fluorene | Diethanolamine |
| Benzene | Indeno(1,2,3-cd)pyrene | |
| Ethylbenzene | Naphthalene | |
| Toluene | Phenanthrene | |
| Phenol | Pyrene | |
| Acenaphthene | Tetrachloroethylene | |
| Acenaphthylene | | |

Note: parameters applicable for Terminal Only and Terminal + Refinery Operations

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ Yes (list all such pollutants below)

☒ No (go to Section IX)

IX. Contract Analysis Information

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

☒ Yes (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

☐ No (go to Section X)


| A. Name | B. Address | C. Area Code & Phone No. | Pollutants Analyzed |
|------------------------------|---|--------------------------|---------------------|
| Pace Analytical Services LLC | 8 East Tower Circle Ormond Beach, FL 32174 | 386-672-5668 | DMR parameters |

X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information submitted is, to my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

| | |
|---|---|
| A. Name & Official Title (type or print) BRIAN K. LORER PRESIDENT | B. Area Code & Phone No. 340-692-3101 |
| C. Signature  | D. Date Signed 06/11/19 |

**TABLE F-I.A. LOCATION AND PHYSICAL DESCRIPTION OF PERMITTED (TPDES)
STORMWATER OUTFALLS**

| STORMWATER OUTFALL NO. | PHYSICAL LOCATION DESCRIPTION |
|---------------------------|---|
| 004 | <p>The sampling point for SW-004 is located about 375 ft. south and 50 ft. east of the knock-out drum, on the west side of the site. Sampling access to the upstream side of 004 culverts leaving facility property is provided by a stairwell on the west side of the west ditch near the property corner. Sample in the middle of the flow stream in the area of maximum turbulence.</p> |
| 006 | <p>The sampling point for SW-006 is located 100 ft. southeast of tank field 59 dike wall. Access to the sampling point is through the south gate along the east fence. A concrete stairwell descends to the bottom of 006 outfall to the sample point (culvert outlet). Sample in the middle of the flow stream in the area of maximum turbulence. Outfall 006 joins the St. Croix Public Works east stormwater ditch. As indicated in the executive summary, removal of this sampling location is requested.</p> |
| 007 | <p>The current sampling point for SW-007 is located near the southeastern corner of the refinery between the North and South Bays of Landfarm 3. This outfall is approximately 900 ft. south of outfall SW-006. Access for sampling is from the northeast corner of SW-007 outfall's confluence with the east fence, upstream of the trash screen. Sample in the middle of the flow stream in the area of maximum turbulence.</p>  <p>The proposed revised sampling point for SW-007 is about 900-950 ft. upstream (to the southwest) of the current location and in the same stormwater conveyance. The proposed revised location is on facility owned land adjacent to the North and South Bays of Landfarm 3 (which are on land not owned by the facility).</p> |

The current sampling point for SW-008 is about 1,000 ft. north of Dock #1 east of the main Dock Road, near the southwest corner of the BTX Pump Manifold containment area. Access into the stormwater junction box is vertical down through a hole cut in the steel manway cover above the outlet. Both due to safety reasons and the amount of turbulence at this location, Limetree Bay Terminals and Refining is requesting to revise this sample location.

008

The proposed revised sampling point for SW-008 is about 30-40 feet to the north (upstream) of the current SW-008 location. There are no other stormwater streams entering the stormwater pipe between these two locations. Access for sampling would be achieved by removing the grated box over the manhole.



009

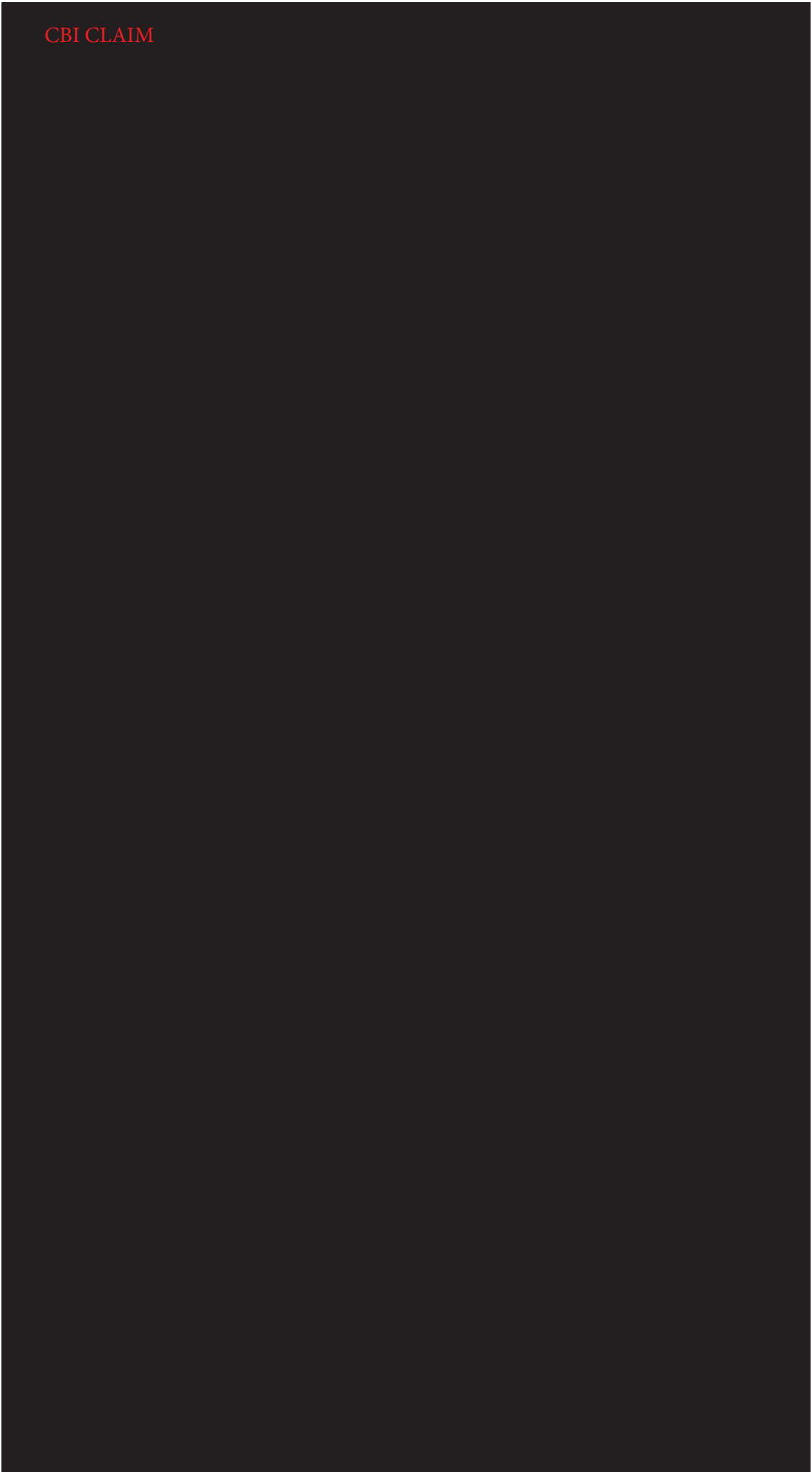
The sampling point for SW-009 is about 250 ft. south of the southwest corner of the Dry Cargo sulfur storage area, adjacent to a stormwater drain grating at the base of the hill and access roadway. Access for sampling is through a concrete hub, vertically into the drain piping. Sample in the middle of the flow stream in the area of maximum turbulence.

011

The original sampling point for SW-011 is about 250 ft. west of the centerline of the South Coke Storage Dome and 80 ft. south of the coke dome access ramp roadway. The original sample access point is situated along the East side of the Marine Maintenance Building access road, immediately west of the Coke Dome Stormwater Retention Basin. Access is through a steel grating into a 36-inch diameter reinforced concrete pipe that discharges into the East Turning Basin North of the Tugboat Dock access walkway.

Due to the difficulty in accessing this location for sampling purposes (i.e., equipment is needed to remove the grate), sampling occurs at the Coke Dome Stormwater Retention Basin (about 20 ft. upstream of the original sample location).





Stormwater from the former SCPC storage tank dikes drain into a sump. Stormwater draining from Off-Site Maintenance, Upper and Lower Recovery Compounds collect in the concrete spillway that accepts run-on from Barren Spot and other off-site areas north of the refinery. This system also accepts stormwater from the Central Maintenance and Former SCPC area (which belongs to the ERT). Tank-fields 1,2,5,6 and the BTEX storage area (primary products stored are heavy, light, and aromatic oils) also discharge to the west stormwater ditch. Stormwater from normally non-oily surfaces in idled process areas 1 and 2 is collected and piped to flow into this drainage as well. Comingled stormwater from large off-site areas (north of the refinery), non-oily process areas, warehouse, and maintenance compounds flow into the West storm drain ditch, and south to a first flush diversion dam. This structure and 24-inch diameter underground pipe functions to transfer the first flush waters into the west side of No. 2 Lagoon so fugitive oil and sheens may be recovered. Stormwater events with flows that exceed the capacity of the diversion dam overflow and continue south through TPDES permitted Outfall 004 into Krause Lagoon.

Stormwater from Tank Fields 3, 7, 4, 8, 9, 10, 11, 12, 13, 14, 57, black oil, No. 5 Crude manifold and No. 1 & 2 manifolds, drain into the north side of No. 1 Lagoon. Tank Field 56 stormwater drains north into the west drainage ditch.

Tank Field 59 discharges non-oily stormwater to No.3 Lagoon. Primary product stored is crude. All products are stored in steel tanks surrounded by dike walls.

Tank Fields 20, 21 and 22 discharge non-process stormwater and oil free hydrotest water to Outfall 008. Primary products stored are middle range distillate, kerosene, and jet fuels.

Stormwater from Tank Field 60 are drained (when oil free) to surface conveyance flowing south along the east side roadway into Outfall 009. Tank Field 20A stormwaters (when oil free) are also drained into Outfall 009. Primary products of these tanks are middle to light aromatics and methanol.

Coker Operations utilize two tanks (Tk-8501, Vacuum Residual and Tk-8502, Decoking Water) for stormwater storage. Tank 8501 (out of service) is 75 feet diameter X 68.5 feet in height (53,895 bbl.) This tank is within secondary containment dikes. Stormwater flows to the north east corner of the dike and is drained after observation by unit operators confirms that it is free of free oil and sheen. Tank 8502 is 50 ft. diameter X 76 feet in height (26,578 bbl.). Stormwater from this tank area flow back into the coke pit for reuse. Stormwater from inside of the Coker Unit battery limits is collected in a stormwater diversion box and pumped to the Waste Water Treatment Unit stormwater pit and then to Tank 7973 for treatment prior to release. Coke is transferred to the Coke storage domes moist by a totally enclosed conveyor system. Coke is stored and maintained moist inside the coke domes. Water that drains from the coke domes is collected in a sump and pumped back to the dome sprinkler systems for reuse. Stormwaters from the areas surrounding the north and south coke domes is collected in the dome Stormwater Retention Basin, located directly west of the South Coke Dome which goes to Stormwater Outfall 011. Stormwater Outfall 011 flows into the East Turning Basin.

Treatment, storage, and material management practices are addressed in the facility's Integrated Contingency Plan.

Pesticides – Contract service by Oliver Exterminating of St. Croix, Inc. is utilized for application of all pesticides in the housing camp areas, building and offices. The applicators are licensed and registered by the U.S. Virgin Islands Government to apply chemicals such as Fyfanon (Malathion) on an as needed basis for control of mosquitoes. Concentrated bulk chemicals are stored and managed by Oliver Exterminating of St. Croix, Inc. at sites remote from facility property. Chemicals are mixed in accordance with manufacturers recommendations and applied as specified by registered, licensed applicators on facility property to minimize the risk of stormwater contamination.

Structural control for Tank fields 1, 2, 5, 6, 20, 20A, 21, 59, FCC and LPG Storage include dike walls with control valves (normally closed) and oil traps. Before drainage and in accordance with SPCC regulations, operators must verify (and log) that there is no oil or sheen present.

The facility maintains a Facility Integrated Contingency Plan that includes BMP, SPCC, and FRP components required by the CWA and visually checks tank dike waters to ensure oil is not released with stormwater during drainage. Dike walls retain water to allow solids to settle (where they are incorporated into the tank field floor), evaporation to occur and controlled (low) drainage rates that prevent erosion. Employees are trained, and good housekeeping measures are mandated.

TABLE F-VI. LIST OF ALL REPORTABLE SPILLS FOR THE LAST THREE YEARS (MAY 2016 - APRIL 2019).

| Date | Description | Incident Type | Affected Area | Material | Est. Gallons | Corrective Action |
|-------------|--|----------------------|----------------------|--------------------------|---------------------|---|
| 08/06/16 | A oil sheen was coming from tankfield drain west of 7423. Sheen got in the east basin north west corner. | Spill to Water | East Basin | Slop oil/ Groundwater | 30 | Notified Agencies, clean up, sump repairs. 2019- new alarm system in place. |
| 04/27/17 | While draining the Chiksans at Dock No. 3 a leak developed on the drain line under the dock leading to the dock sump. | Spill to Water | Dk 3 | Crude | 20 | Notified Agencies; deployed boom and boats with sorbents and vacuum truck. Replaced line. |
| 05/01/17 | During final sounding of Fuel tanks the Manchenil Bay experienced rolling at dock causing a burp of fuel out of the sounding pipe. Spilled oil to the water. | Spill to Water | RO RO Dock | Diesel | 0.75 | Notified Agencies, used sorbents and cleaned. |
| 07/15/17 | Spill from OOS Piping at dock leaked into the harbor waters. | Spill to Water | Dk 8 | 6 oil | 5 | Deployed boom and boats with sorbents and vacuum truck. Reported to appropriate agencies. |
| 01/04/18 | Failure in the weld of the low and high points on the 24" Bypass of the 42"C/L northeast of DK#7 caused Ekofisk crude to spill to ground and water. | Spill to Water | DK 7 | Crude | 84 | Notified Agencies, Bermed, boomed and cleaned. |
| 11/04/18 | An oil sheen was observed on the sea waters around the vessel Torm Sofia. | Spill to water | DK 3 | Hydraulic Oil | 0.25 | Notified Agencies, Vacuumed apron and adjusted crane hoses, crane mechanically repaired. |

Part A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

| Pollutant and CAS Number (if available) | Maximum Values (include units) | | Average Values (include units) | | Number of Storm Events Sampled | Sources of Pollutants |
|--|--|----------------------------|--|----------------------------|---|-----------------------|
| | Grab Sample Taken During 1st 30 Min. * | Flow-weighted Composite | Grab Sample Taken During 1st 30 Min. * | Flow-weighted Composite | | |
| Oil and Grease | 6.4 mg/L | | 1.3 mg/L | | 31 | |
| Biological Oxygen Demand (BOD5) | TBD | | | | | |
| Chemical Oxygen Demand (COD) | TBD | | | | | |
| Total Suspended Solids (TSS) | TBD | | | | | |
| Total Kjeldahl Nitrogen | TBD | | | | | |
| Nitrate plus Nitrite Nitrogen | TBD | | | | | |
| Total Phosphorus | TBD | | | | | |
| pH | TBD | | | | | |

Part B. List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See instructions for additional details and requirements.

[illegible]

| Part D. Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample. | | | | | |
|--|---|--|--|--|--|
| 1. Date of Storm Event | 2. Duration of Storm (in minutes) | 3. Total rainfall during storm event (in inches) | 4. Number of hours between beginning of storm measured and end of previous measurable rain even | 5. Maximum flow rate during rain event (gallons/minute or specify units) | 6. Total flow from rain event (gallons or specify units) |
| Aug 2018 | 540 | 2.1 | > 72 hrs | unknown | 2.29 |

The Rational Method for estimating runoff was utilized. Total flows from the rain events were estimated from the rainfall amounts recorded from a facility gage on the day the samples were collected. This rainfall was multiplied by the specific outfall drainage area (with appropriate unit conversion factors) to determine the total flow volume. No stormwater flowrates were directly measured.

Part A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

| Pollutant and CAS Number (if available) | Maximum Values (include units) | | Average Values (include units) | | Number of Storm Events Sampled | Sources of Pollutants |
|--|--|----------------------------|--|----------------------------|---|-----------------------|
| | Grab Sample Taken During 1st 30 Min. * | Flow-weighted Composite | Grab Sample Taken During 1st 30 Min. * | Flow-weighted Composite | | |
| Oil and Grease | 3.9 mg/L | | 1.37 mg/L | | 29 | |
| Biological Oxygen Demand (BOD5) | TBD | | | | | |
| Chemical Oxygen Demand (COD) | TBD | | | | | |
| Total Suspended Solids (TSS) | TBD | | | | | |
| Total Kjeldahl Nitrogen | TBD | | | | | |
| Nitrate plus Nitrite Nitrogen | TBD | | | | | |
| Total Phosphorus | TBD | | | | | |
| pH | TBD | | | | | |

Part B. List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See instructions for additional details and requirements.

[illegible]

Part A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

| Pollutant and CAS Number (if available) | Maximum Values (include units) | | Average Values (include units) | | Number of Storm Events Sampled | Sources of Pollutants |
|--|--|----------------------------|--|----------------------------|---|-----------------------|
| | Grab Sample Taken During 1st 30 Min. * | Flow-weighted Composite | Grab Sample Taken During 1st 30 Min. * | Flow-weighted Composite | | |
| Oil and Grease | 12.6 mg/L | | 1.7 mg/L | | 30 | |
| Biological Oxygen Demand (BOD5) | TBD | | | | | |
| Chemical Oxygen Demand (COD) | TBD | | | | | |
| Total Suspended Solids (TSS) | TBD | | | | | |
| Total Kjeldahl Nitrogen | TBD | | | | | |
| Nitrate plus Nitrite Nitrogen | TBD | | | | | |
| Total Phosphorus | TBD | | | | | |
| pH | TBD | | | | | |

Part B. List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See instructions for additional details and requirements.

[illegible]

WATER TREATMENT ADDITIVES

WATER TREATMENT CHEMICALS INFORMATION

| Material | Purpose | Areas of Use |
|--|----------------------------|----------------------|
| Ethylenediaminetetraacetic acid (EDTA) | Clean in Place Maintenance | RO System |
| Sodium Hydroxide | Clean in Place Maintenance | RO System |
| Citric Acid | Clean in Place Maintenance | RO System |
| Hydrochloric Acid | Clean in Place Maintenance | RO System |
| Glycerin | During Membrane Changes | RO System |
| AOS 6530 (Phosphoric Acid) | Nutrient Addition | Wastewater Treatment |
| AOS 7000 (Aluminum Chloride) | Coagulant | Wastewater Treatment |
| AOS 7015 (Polymer) | Flocculant | Wastewater Treatment |
| AOS 7230 (Defoamer) | Foam Control | Wastewater Treatment |
| AOS 7548 (Copolymer) | Flocculant | Wastewater Treatment |
| Sulfuric Acid | pH control | Wastewater Treatment |
| Sodium Hydroxide | pH control | Wastewater Treatment |
| Spent Caustic | pH control | Wastewater Treatment |
| To be determined ^(A) | Anti-scalant | EBRU towers |
| To be determined ^(A) | Various | Cooling tower |
| BPB 59490 | Corrosion Inhibitor | Boilers |
| BPP 90001 | Oxygen Scavenger | Boilers |
| Caustic | Alkalinity Control/Balance | Boilers |
| Y7BH1034 | Corrosion Inhibitor | Boilers |

Note:

(A) Chemicals that will be used have yet to be decided upon. As more information becomes available, LBE will provide this information to DPN as an addendum to this application.